NEWPORT
FIRE DEPARTMENT

REQUEST FOR PROPOSAL

FOR

1500 GPM/750 GALLON
CUSTOM PUMPER SPECIFICATIONS

SCHEDULE

REQUEST FOR PROPOSAL ADVERTISED ..... April 2, 2015

LAST DATE FOR SOLICITATION PROTEST .... April 30, 2015 5: 00 p.m. PDT

LAST DATE FOR REQUESTS FOR INTERPRETATIONS..... April 30, 2015 5:00 p.m. PDT

PROPOSALS RECEIVED..... May 14, 2015 4:00 p.m. PDT

RFP OPENING ..... May 14, 2015 4:15 p.m. PDT

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NEWPORT FIRE DEPARTMENT
1500 GPM CUSTOM PUMPER

This Notice is to be published at least 30 days prior to closing, at least once in at least one newspaper of general circulation within Newport and in as many additional issued and publications as City may desire. In addition, City may mail notice of the availability of the RFP to individual vendors, place it within the City's electronic procurement system and/or on the City's website.

SECTION 1
REQUEST FOR PROPOSAL

Pursuant to ORS 279B.060 and City Public Contracting Rule 137-047-0260, governing competitive sealed proposals, City of Newport Fire Department will receive sealed proposals no later than May 14, 2015 at 4:00 p.m. PDT at the Newport Fire Department, 245 NW 10th Street, Newport, OR 97365, to provide one (1) **1500 GPM/750 Gallon Custom Pumper**. No proposals will be received or considered after this time. Contract terms, conditions and specifications shall be available for review at the Newport Fire Department, at the above address from April 2, 2015 to May 14, 2015.

Sealed proposals shall be sent to Fire Chief Rob Murphy at the above address. Proposal opening is scheduled for 4:15 p.m. PDT on May 14, 2015 at the Newport Fire Department, address above. The City may cancel this RFP or reject any proposal not in compliance with all prescribed public solicitation procedures and requirements, and may reject any or all proposals in whole or in part, upon a finding that it is in the best interest of the City to do so, per ORS 279B.100. The City may waive any and all informalities in the public interest. No prequalification for proposers is required.

To request an RFP packet or for more information, contact Rob Murphy, Fire Chief for the Newport Fire Department at (541) 265-9461.

Dated this 2nd day of April, 2015.

SECTION 2
INSTRUCTIONS TO PROPOSERS

2.1. GENERAL

Proposers shall study carefully and conform to these "Instructions to Proposers" so that Proposers' proposals will be regular, complete and acceptable.

2.2. PROPOSALS

All proposals shall be legibly written in ink or typed and comply in all regards with the requirements of this solicitation. All proposals shall be signed in ink in the blank spaces provided herein (Section 4). If the proposal is made by a firm or partnership, the name and address of the firm or partnership shall be shown, together with the names and addresses of the members. If the proposal is made by a corporation, it shall be signed in the name of such corporation by an official who is authorized to bind the vendor.

Proposals shall be accompanied by a detailed description of the apparatus and equipment Proposer proposes to furnish in accordance with the Specifications (Section 3). All proposals shall be on the forms provided by the City of Newport.

2.3. "OR APPROVED EQUAL" CLAUSE

Brand names or model numbers have been specified for some items within this specifications. These have been carefully selected because of their reliability and availability for replacement locally. Use of a brand name is intended to convey to the Proposer the degree of excellence required. Any article, equipment, or material, which shall conform to the standards and excellence so established, and is of equal merit, strength, durability and appearance to perform the desired function, is deemed eligible for offer as a substitute. In order to be most responsive, items named, or an item "equal to" the particular item specified by brand name or model, should be contained in the proposal.

It is the Proposer's responsibility to prove to the Newport Fire Department (Purchaser) that an item "equal to" a particular specified item is truly of equal quality, design, and function. The qualifications of the offering shall be judged as to their conformance with these specifications. Any equipment offered other than herein specified shall be subject to a competitive demonstration and evaluation shall be subject to a competitive demonstration and evaluation by the using department. Such demonstration to be provided on request within ten working days after the receipt of proposals.

The result of that demonstration and evaluation shall be of prime importance in the recommendation to the governing body for the final contract award. The Purchaser maintains the right to make a final decision as to the acceptability of an item proposal as "equal to" a particular specified item.

2.4. PROPOSERS' BACKGROUND

All Proposers shall state the ownership of the organization which shall actually construct the apparatus. Companies which are a division, subsidiary, wholly or partially owned subsidiary or other entity which is wholly or partially owned or controlled by another entity, shall state their entire ownership lineage. Proposers from such organizations must have the proposal signed by the chief executive of the parent entity.

2.5. SUBMISSION OF PROPOSALS:

Proposals must be submitted in sealed envelopes marked "CONFIDENTIAL" bearing on the outside the name and address of the proposer. The words "Fire Apparatus Proposal," the date, and the proposal opening time must be stated on the face of the proposal envelope. If the proposal is forwarded by mail, the sealed envelope containing the proposal and marked as directed above, must be enclosed in another envelope addressed to Rob Murphy, Fire Chief, Newport Fire Department, 245 NW 10th Street, Newport, OR 97365.

2.6. RECEIPT AND OPENING OF PROPOSALS:

Proposals shall be submitted prior to the time fixed in the advertisement for proposals. It is the Proposer's responsibility to see that their proposals arrive on time. Late proposals, faxed or electronically delivered proposals shall be rejected as non-responsive.

No responsibility will be attached to any official of the Purchaser for the premature opening of, or the failure to open, a proposal not properly addressed and identified.

2.7. WITHDRAWAL OF PROPOSALS

Any proposals may be withdrawn prior to opening, pursuant to City Public Contracting Rule 137-047-0440. Vendors' proposals shall be valid for at least 30 days from RFP opening.

2.8. MODIFICATION

Any vendor may modify its proposal by registered communication at any time prior to the scheduled closing time for receipt of proposals, provided that such communication is received prior to the closing time. The communication should not reveal the proposal price but should provide that the final price or terms will not be known until the sealed proposal is opened.

2.9. ACCEPTANCE OR REJECTION OF PROPOSALS

Any evidence of collusion between Proposers may constitute a cause for rejection of any proposals so affected. In the award of the contract, the City Council will award the contract to the vendor whose proposal is deemed best for the public good. The City Council reserves the right to accept or reject any or all proposals. Only one proposal will be accepted from any one firm or association.

2.10. ADDENDA AND INTERPRETATIONS

Statements by Purchaser staff or its representatives are not binding on Purchaser, unless confirmed by written addendum. Addenda will issue and proposers shall receive addenda per City Public Contracting Rule 137-047-0430, and as follows: Purchaser will not mail notice of addenda, but will publish notice of any addenda on Purchaser's website, www.newportoregon.gov. Addenda may be downloaded off Purchaser's website. Proposers should frequently check the Purchaser's website until closing (i.e., at least once weekly until the week of closing, and at least once daily the week of the closing period).
No interpretation of the meaning of the specifications or other contract documents shall be made to any proposer verbally. Requests for interpretations shall be submitted in the same manner as solicitation protests per City Public Contracting Rule 137-047-0730, Public Contracting Rules - 2012 or http://thecityofnewport.net/dept/adm/documents/publiccontractingrules or but must be received at least **TEN (10) DAYS** prior to the date set for the opening of Proposals. Any and all responsive interpretations will be provided via written addenda, as set forth above. Failure of any Proposer to receive any such addenda shall not relieve such Proposer from any obligation under this RFP. All addenda so issued shall become as much a part of the solicitation documents, as if bound herein.

2.11. FAIR, ETHICAL AND LEGAL COMPETITION

In order to ensure fair, ethical, and legal competition, neither original equipment manufacturer (O.E.M.) nor parent company of the O.E.M. shall have ever been fined or convicted of price fixing, bid rigging, or collusion in any domestic or international fire apparatus market.

2.12. NONDISCRIMINATION

Submittal of a proposal in response to this RFP evidences proposer's agreement that, in performing the work called for by this proposal and in securing and supplying materials, proposer has not and will not discriminate against: 1) any person on the basis of race, color, religious creed, political ideas, sex, age, marital status, physical or mental handicap, national origin or ancestry unless the reasonable demands of employment are such that they cannot be met by a person with a particular physical or mental handicap; and 2) a subcontractor in the awarding of a subcontract because the subcontractor is a minority, woman, or emerging small business enterprise certified under ORS 200.055, or a business enterprise that is owned or controlled by, or that employs a disable veteran as defined in ORS 408.225.

2.13. PREPARATION OF OFFERS

Proposers are expected to examine the specifications, schedules and all instructions. The Purchaser is not liable for costs associated with preparation of proposals in response to this RFP.

2.14. SOLICITATION PROTESTS

Proposers may protest the procurement process or provisions of this RFP pursuant to City Public Contracting Rule 137-047-0730. Protests shall include all information required by ORS 279B.405, including a statement of desired changes to the procurement process for this RFP. Such protests shall be in writing and addressed to:

Rob Murphy, Fire Chief
Newport Fire Department
245 NW 10th Street
Newport, OR 97365

Such comments shall be submitted to Purchaser no later than **TEN (10)** business days prior to the opening date. No comments will be accepted after that time.

2.15. EMPLOYEES NOT TO BENEFIT

No employee or elected official of Purchaser shall be permitted to receive any share or part of this contract or any benefit that may arise therefrom.

2.16. FIRE DEPARTMENT FURNISHED PROPERTY

No material, labor or facilities will be furnished by the Purchaser unless otherwise provided for in this Request for Proposal.

2.17. PROTEST OF AWARD

The award by the City Council of the contract shall constitute a final decision of the Purchaser to award the contract, if no written protest of the award is filed pursuant to City Public Contracting Rule 137-047-0740 with the Purchaser within **SEVEN (7)** calendar days from the notice of intent to award. If a timely protest is filed, the award is a final decision of the Purchaser only upon issuance of a written decision denying the protest and affirming the award. The award and any written decision denying a protest shall be sent to every Proposer who provided an address. The Purchaser will not entertain a protest submitted after the time period established in this RFP.

2.18. INTERGOVERNMENTAL COOPERATIVE PURCHASING STATEMENT

The City grants to public governmental agencies authorization to establish contracts or price agreements under the terms, conditions and prices of any contract between the awardee and the City resulting from this RFP. The condition of such use by other agencies shall be that any such agency must make and pursue contact, purchase order/contract, and all contractual remedies with the successful proposer. Such tag-ons shall be done so that the City has no responsibility for performance by either the vendor or the agency using the contract.

2.19. DELIVERY TIME

Each proposer shall state the completed apparatus delivery time based on the number of calendar days, starting from the date the sales contract is signed and accepted by the apparatus manufacturer.

2.20. PRICES AND PAYMENTS

The proposal price shall be F.O.B. Destination, on a delivered and accepted basis at the Fire Department.

Total price on Proposer's proposal sheet must include all items listed in these specifications. Listing any items contained in the specification as an extra cost item, unless specifically requested to do so in these specifications, shall automatically be cause for rejection.

Proposer shall compute pricing less federal and state taxes. It is understood that any applicable taxes shall be added to the proposed prices, unless the purchaser furnishes appropriate tax-exempt forms.

2.21.1. BOND REQUIREMENTS

The apparatus manufacturer must provide all bonds; bonds provided by a sales representative, dealer, distributor, or agent of the apparatus manufacturer are not acceptable.

With respect to the qualifications of proposed bonds or sureties, the Proposer's bonding company must meet the following requirements:

- An acceptable surety as outlined by the department of treasury on their most recent federal register at a limit of at least $10,000,000;

- A.M. Best rating of "A" or better with a financial rating of at least "VIII"; and licensed as a surety in the state where the sale is to be made.

2.21.2. PROPOSAL BOND

Each proposal shall be accompanied by a proposal bond in the amount of ten percent (10%) of the proposal price. Failure to provide an original, acceptable, valid proposal bond with the proposal shall result in the immediate rejection of the Proposal's proposal.

2.21.3. PERFORMANCE BOND

The successful Proposer shall provide, within thirty (30) days after receiving the proposal award, a performance bond in an amount equal to 100% of the Order amount and shall be dated concurrent to, or subsequent to, the date of the Order.

2.22. RESERVED RIGHTS

The Purchaser reserves the right:

A. To reject any proposal not in compliance with all prescribed public bidding procedures and requirements.

B. To reject for good cause any or all proposals upon the Purchaser's written finding that it is in the public interest to do so.

C. To reject any and all proposals not meeting or differing from the specifications set forth herein.

D. To require a Proposer, before awarding a contract, to submit evidence of his qualifications as may be deemed necessary. Documentation, which may be required, is financial soundness, technical competency, and other pertinent qualifications of a Proposer, including past performance (experience) with the Purchaser.

E. To waive any or all informalities in the proposals submitted.

F. To consider the competency and responsibility of Proposers in making any awards.

G. In the event that two or more proposals are identical in price, fitness, availability and quality, award shall be made in accordance with City Public Contracting Rule 137-046-0300.

H. In the event any proposer or proposers to whom a contract is awarded shall default in executing said formal contract or in furnishing a satisfactory performance bond within the time and manner herein after specified, to re-award the contract to another proposer or proposers.

I. To hold the three most responsive proposals and accompanying checks or bonds under consideration until the final award is made, provided that the Purchaser shall award the contract within 30 days after the proposal opening date.

J. To extend the deadline for submitting proposals, in according with City Public Contracting Rule 137-047-0430(3).

K. To negotiate additions or deletions to apparatus.

L. To include liquidated damages of $150 per day for each day the apparatus is not delivered as set forth in the contract, barring circumstances beyond Contractor's control.

2.23. RECYCLABLE PRODUCTS

Proposers shall use recyclable products to the maximum extent economically feasible in the performance of the contract work set forth in this document, provided said recycled materials meet all applicable standards. Preference for such recycled materials shall be given pursuant to City Public Contracting Rule 137-046-0320.

2.24. ASBESTOS ABATEMENT LICENSE

No asbestos abatement license is required of proposers for this work under ORS 468A.710.

2.25. PRODUCT LIABILITY

Each proposer shall supply proof of product liability and facility insurance equal to or exceeding $30,000,000.00. This shall be provided as part of the proposal.

Garage insurance is not acceptable.

2.26. CERTIFICATE OF ORIGIN.

Prior to payment, proposer shall deliver to Purchaser a manufacturer's Certificate of Origin or title to the apparatus, showing them to be free and clear of any and all encumbrances.

2.27. SINGLE-LINE RESPONSIBILITY

Since Purchaser desires to eliminate divided responsibility on the part of the manufacturers, only manufacturers who build their own fire apparatus cab, chassis, body and aerial device shall be considered. The entire apparatus (to include cab, chassis, body, pump, water tank) MUST be manufactured in the United States!

Upon award of contract, the sales contract shall be between the purchaser and the manufacturer of the apparatus. Contracts between the purchaser and a sales representative, dealer, distributor, or agent of the apparatus manufacturer shall not be acceptable. (NO EXCEPTIONS.)

2.28. TECHNICAL INFORMATION

Proposer shall furnish free of charge, upon request, technical information, graphs, charts, photographs, engineering diagrams, steering geometry, drive train certifications, instruction guides, or other documentation as requested to show that the equipment offered fully complies with these specifications.

2.29. NO WAIVER OF LEGAL RIGHTS

The Purchaser shall not be precluded or stopped by any measurement, completion and acceptance of the work and payment therefore from showing that any such measurement, estimate or certificate is untrue or incorrectly made, or that the work or materials do not conform in fact to the contract. The Purchaser shall not be precluded or stopped, notwithstanding any measurement, estimate, or certificate, and payment in accordance therewith, from recovering from contractor and his/her surety such damages as it may sustain by reason of his/her failure to comply with the terms of the contract. Neither the acceptance by the Purchaser, nor any representative of the Purchaser, nor any payment for acceptance of the whole or any party of the work, on any extension of time, nor any possession taken by the Purchaser, shall operate as a waiver of any portion of the contract or of any power herein reserved, or any right to damages herein provided. A waiver of any breach of the contract shall not be held as a waiver of any other subsequent breach of the contract.

2.30. NEGOTIATION

The Purchaser may negotiate specification modifications and the contract price as permitted by the Purchaser's public contracting rules.

SECTION 3
SCOPE OF WORK

3.1. SCOPE OF WORK

The Purchaser is seeking a qualified vendor to supply one minimum 1500 GPM/750 Gallon Custom Pumper, built to the following specifications:

The unit shall be designed to conform fully to the "Pumper Fire Apparatus" requirements as stated in the NFPA 1901 Standard (2009 Revision), which shall include the following required chapters as stated in this revision:

- Chapter 1 Administration
- Chapter 2 Referenced Publications
- Chapter 3 Definitions
- Chapter 4 General Requirements
- Chapter 5 Pumper Fire Apparatus
- Chapter 12 Chassis and Vehicle Components
- Chapter 13 Low Voltage Electrical Systems and Warning Devices
- Chapter 14 Driving and Crew Areas
- Chapter 15 Body, Compartments and Equipment Mounting
- Chapter 16 Fire Pumps and Associated Equipment
- Chapter 18 Water Tanks

The fire apparatus and equipment to be furnished in meeting these specifications must be the products of an established, reputable fire apparatus and/or equipment manufacturer. Each Proposer shall furnish satisfactory evidence of the manufacturer's ability to construct, supply service parts and technical assistance for the apparatus specified. Each Proposer must state the location of the factory and location for post-delivery service.

It is the intent of these specifications to cover the furnishing and delivery of a complete and soundly engineered apparatus equipped as specified. Minor details of construction and materials, where not otherwise specified, are left to the discretion of the contractor, who shall be solely responsible for the design and construction of all features.

Each Proposer must indicate his compliance with these specifications by marking “YES” or “NO” in the appropriate column for each individual paragraph of this specification. Indicating “YES” to a paragraph shall mean full compliance; indicating “NO” shall mean an exception is being taken. Any deviation from the specification, no matter how small, must be so annotated. All exceptions must be fully explained on a separate page, titled “Exceptions,” giving reference to the page and paragraph where the exception is being taken. Drawings, photographs, and technical information about the exception shall be included as necessary. Failure to comply with this requirement shall result in the proposal being rejected.

Purchaser shall be the sole arbiter as to what exceptions may be allowed or disallowed, and the decision shall be final. In the event a Proposer fails to make any indication of compliance for any or all provisions it will be assumed that the Proposer is taking total exception to the specification and the proposal shall be disallowed. Proposals taking total exceptions to specifications shall not be accepted.

No exception shall be allowed for any of the aforementioned instructions. Proposals not submitted in accordance with these instructions shall be rejected.

3.2. USER'S LIST

Each proposal shall include a current “User’s List” with a minimum of ten (10) pumper units that are within the northwest. This list shall include customer name, person to contact, address and telephone number. Failure to include this list shall result in rejection of the proposal.

3.3. GENERAL CONSTRUCTION

The complete apparatus, assemblies, subassemblies, component parts, etc., shall be designed and constructed with the due consideration to the nature and distribution of the load to be sustained and to the general character of the service to which the apparatus is to be subject. All parts of the apparatus shall be designed with a factor of safety, which is equal to or greater than that which is considered standard and acceptable for this class of equipment in firefighting service. All parts of the apparatus shall be strong enough to withstand general service under full load. The apparatus shall be so designed that the various parts are readily accessible for lubrication, inspection, adjustment and repair. Proposer's specifications must meet minimum requirements of N.F.P.A. Pamphlet #1901; Underwriter's Laboratories, Inc.; and all State and Federal Department of Transportation vehicle regulations at time of sale of unit.

The apparatus shall be designed and constructed, and the equipment so mounted, with due consideration to distribution of the load between front and rear axles that all specified equipment, including a full complement of specified ground ladders, full water tank, loose equipment, and firefighters shall be carried without overloading or injuring the apparatus.

3.3.1. CAB SAFETY SIGNS

The following safety signs shall be provided in the cab:

- A label displaying the maximum number of personnel the vehicle is designed to carry shall be visible to the driver.
- "Occupants will be seated and belted when apparatus is in motion" signs shall be visible from each seat.
- "Do Not Move Apparatus When Light Is On" sign adjacent to the warning light indicating a hazard if the apparatus is moved (as described in subsequent section).
- A label displaying the height, length, and GVWR of the vehicle shall be visible to driver.
- This label shall indicate that the fire department will revise the dimension if vehicle height changes while vehicle is in service.

3.3.2. CHASSIS DATA LABELS

The following information shall be on labels affixed to the vehicle:

Fluid Data

- Engine Oil
- Engine Coolant
- Chassis Transmission Fluid
- Pump Transmission Lubrication Fluid
- Pump Primer Fluid (if applicable)
- Drive Axle(s) Lubrication Fluid
- Air Conditioning Refrigerant
- Air Conditioning Lubrication Oil
- Power Steering Fluid
- Cab-Tilt Mechanism Fluid
- Transfer Case Fluid (if applicable)
- Equipment Rack Fluid (if applicable)
- Air Compressor System Lubricant
- Generator System Lubricant (if applicable)
- Front Tire Cold Pressure
- Rear Tire Cold Pressure
- Aerial Hydraulic Fluid (if applicable)
- Maximum Tire Speed Rating

Chassis Data

- Chassis Manufacturer
- Production Number
- Year Built
- Month Manufactured
- Vehicle Identification Number

Manufacturer's Weight Certification

- Gross Vehicle (or Combination) Weight Rating (GVWR or GCWR)
- Gross Axle Weight Rating, Front
- Gross Axle Weight Rating, Rear

3.3.3. ROLLOVER STABILITY

The apparatus shall meet the criteria defined in 4.13.1 for rollover stability as defined in the 2009 NFPA Standard for Automotive Fire Apparatus.

3.3.4. SEAT BELT ANCHOR TESTING

Each seat belt anchor shall be tested to withstand 3,000lbs of pull on both the lap and shoulder belt in accordance with FMVSS 210 section 4.2.

3.3.5. SEAT MOUNTING TESTING

Each seat mounting position shall be tested to withstand 20G's of force in accordance with FMVSS 207 section 4.2(c).

Both tests shall be performed and verified at a third party testing and evaluation center.

3.3.6. CAB TYPE

- **FULL TILT**
- **CONTOUR WINDSHIELD**

The cab shall be a custom tilt style, built specifically for fire service. The cab shall be a cab over engine design, with integral tilt mechanism and engine access from inside the cab.

3.3.7. OPEN SPACE DESIGN

The cab interior shall be the "Open-Space" design with no wall, window or vertical support posts between the front and rear crew areas to allow direct communication, better visibility and air circulation in the cab.

3.3.8. CAB MATERIAL – ALUMINUM

The cab shall be fabricated from aluminum alloy.

3.3.9. CRASH TESTING CERTIFICATION

To ensure the safety of the cab occupants and cab integrity, proof of third party testing shall be provided. The cab shall be certified for SAEJ2422 side impact, SAEJ2420 with ECER29 cab front impact, and ECER29 cab roof strength.

Furthermore, proof of testing and certification shall be provided that the cab, in accordance to SAE J2420 was front impact tested at 2.1 times the standard energy required in SAE J2420, thus exceeding the NFPA requirement.

This test shall be performed with no support immediately behind the cab, thus providing an authentic test result.

3.3.10. DIMENSIONS - MEDIUM FOUR DOOR STYLE CAB

(***Proposer's proposal shall contain actual cab dimensions***):

3.3.11. CAB ROOF

The roof will be of a split level design with radius edges for an aesthetic, streamline appearance. The roof shall be constructed the same material as the main structure and shall be internally reinforced using framing which shall span the entire width and length of the cab for maximum structural integrity. This shall allow the roof to support personnel and roof mounted equipment without the need for additional reinforcement.

The cab roof over the rear crew area shall be raised minimum ten (10) inches higher than the front driver and officer area. The front face of the raised roof section shall be sloped at a 45 degree angle, creating a streamlined interface with the standard, lower, forward roof section. This design shall allow for additional interior height in the rear crew area.

The rear crew area doors shall be "Vista-Style," extending full height to the radius edge of the raised roof.

3.3.12. CAB ROOF OVERLAY

The cab roof area below the light tower shall be overlaid with bright finish aluminum tread plate.

3.3.13. CAB ROOF DRIP RAIL

For enhanced protection from inclement weather, an integral drip rail shall be furnished on each side of the cab roof. The drip rail shall extend the full length of the cab roof.

3.3.14. CAB DOORS

Four (4) side-opening doors shall be provided.
There shall be a heavy duty piano type stainless steel hinge on each door. Hinges shall be slotted for ease of horizontal and vertical adjustment. There shall be a cab door seal and the doors shall close flush with the side of the cab. A heavy-duty reinforced strap shall be utilized to prevent the cab doors from opening greater than 90 degrees.

3.3.15. DOOR LATCHES

A semi-recessed chrome plated pull handle, capable of operating with a gloved hand, shall be provided on the exterior of each cab door. Heavy-duty, bright finish cast paddle latches shall be provided on the interior of each cab door.

3.3.16. LOCKING CAB DOORS

Each exterior cab door shall be equipped with keyed locks. The cab doors shall be capable of being locked from the outside with a key and from the inside with a control in each interior paddle latch.

3.3.17. ELECTRICAL DOOR WINDOWS

Each side cab door shall have a tinted retractable window operated by an electrical switch. The window track shall house a track and seal.

The driver shall have a control to operate all windows, and a control shall be installed at each window.

3.3.18. INNER DOOR PANELS

The cab door interior panels shall be covered with a one piece, full height, spatter painted aluminum panel for ease of maintenance. The panel shall be aluminum and shall be designed to allow easy access to the inner door.

Each interior cab door panel shall be equipped with reflective Scotchlite material that shall cover at least 96 in^2.

3.3.19. WINDSHIELD/GLASS

A safety glass windshield shall be provided on the cab for the driver and officer providing a clear viewing area. The windshields shall be full width to the center of the front cab support for each side and provide the occupants with a panoramic view. To provide enhanced peripheral vision on each side of the cab, the windshield and cab structure shall be designed with radius corners. Sq. in. of windshield viewing area shall be included in the bidders' proposal.

3.3.20. WINDSHIELD WIPERS AND WASHER

Dual, electric operated, pantographic type windshield wipers shall be provided. One (1) electric drive motor shall be provided for each wiper.

Wipers shall have "HI/LO" and "INTERMITTENT" operating speeds. "The wipers shall be of the self-parking type.

Windshield washers shall be electric operated wet-arm type with a 1 gallon washer fluid reservoir. The washer control shall be integral with the intermittent wiper control switch.

There shall be individual removable panels on the front face of the cab for access to the wiper motor assemblies.

3.3.21. CAB SIDE VIEWING WINDOWS

A fixed window shall be provided on each side of the cab behind the forward cab doors. This window will be the same height as the window in the rear cab door for maximum visibility.

3.3.22. GRAB HANDLES

Four (4) 1-1/4" diameter, knurled, bright finished handrails shall be provided, one (1) at each cab door entrance. Grab rail stanchions shall be chrome plated and offset when necessary to prevent "hand-pinching" when opening or closing the doors. Formed rubber gaskets shall be provided between each stanchion base and the cab surface.

3.3.23. INTERIOR GRAB RAILS

Grab rails shall be provided to assist in entry and exiting of the cab. Each grab rail shall be located in the following locations:

- One (1) long, horizontally mounted, on each front cab door on the upper interior door panel
- One (1) long, vertically mounted, on the officer's side "A" post

- One (1) long, horizontally mounted, on each rear cab door, located approximately 8" above the bottom of the window opening

3.3.24. FRONT CAB GRILL

A shaped polished stainless steel grille shall be installed to allow for maximum air flow to the charge air cooler and the radiator.

3.3.25. AIR INTAKE/OUTLET

Two (2) shaped, polished stainless steel air inlets/outlets shall be provided horizontally above the wheel well opening, one on each side of the cab. The grilles shall be equipped with a mesh screen to serve as a secondary ember separator. The design shall permit proper ducting of air through the engine compartment and cooling system.

3.3.26. ENGINE AIR INTAKE SYSTEM

The left side inlet, used for the air intake to the air cleaner, shall be equipped with dual ember separators for separating burning embers from the air intake system. This system shall be such that particles larger than .039 inches (1 mm) in diameter cannot reach the air filter element.

3.3.27. WHEEL WELL LINERS

The front cab wheel wells shall be equipped with fully removable, bolt-in, aluminum or stainless inner wheel well liners. The liners shall extend full depth into the truck frame. The completely washable wheel well liners shall be designed to protect the cab substructure, inner panels, and other miscellaneous installed components from road salts, debris, dirt accumulation and corrosion.

3.3.28. FENDERETTES

The cab wheel well openings shall be trimmed with replaceable, bolt-in, polished stainless steel fenderettes. The fenderettes shall be secured to the cab with stainless steel threaded fasteners along the internal perimeter of the wheel well.

3.3.29. FRONT MUD FLAPS

Heavy duty, black rubber type mud flaps shall be provided behind the front wheels.

3.3.30. MIRRORS, HEATED REMOTE

The cab mirrors shall be mirrors with a break-away bracket. The flat glass head shall be heated and remote controlled with the convex heated. The mirror heads shall have a smooth chrome plated high impact non-metallic housing.

3.3.31. INTERIOR TRIM

The cab interior shall be constructed to create an ergonomically designed interior to be user friendly and functional for the driver and officer.

The forward overhead panel shall be a fabricated aluminum module painted to match the interior. This module shall contain the integrated windshield defroster/heater.

The headliner and rear cab wall shall utilize gray vinyl material, with padding underneath, to provide additional insulation.

The interior metal surfaces of the cab shall be finish painted the same color as the main exterior color.

3.3.32. INTERIOR REAR WALL

The interior rear wall of the cab shall be covered with gray vinyl for durability and shall match the other areas of the cab.

3.3.33. UNDER SEAT STORAGE COMPARTMENTS

There shall be a compartment provided under each front seat with door. Each compartment shall be accessible when the door is opened.

3.3.34. CAB FLOORING

The floor of the driver's compartment and the floor of the crew area shall be lined with vinyl composite flooring to comply with NFPA noise and heat requirements.

The material utilized for this application shall be certified to meet the NFPA 1901, 2009 revision for anti-slip walking surfaces.

3.3.35. ENGINE ENCLOSURE

The engine enclosure shall be insulated to protect from heat and sound. The noise insulation shall keep the DBA level within the limits stated in the current NFPA series 1900 pamphlet.

3.3.36. SUN VISORS

To provide maximum protection for the driver and officer, two (2) dark sun visors shall be mounted in the cab overhead on each side.

3.3.37. DRIVER'S SEATING POSITION

The seat shall be air ride suspension, high back seat with a double locking fore and aft slide adjustment. The seat shall have adjustments for height and ride with a contoured thigh support bottom cushion.

A red 3-point, shoulder harness type seat belt shall be supplied for the seat.

3.3.38. OFFICER'S SEATING POSITION

The seat shall be an adjustable Self-Contained Breathing Apparatus (SCBA) type seat with a fixed bottom cushion and a split head rest. The seat shall contain a SCBA filler pad for when the bottle is not in use.

A red 3-point, shoulder harness type seat belt shall be supplied for the seat.

Mounted in the seat there shall be a hands-free SCBA holder that is a strap-free docking station that offers a hands-free release when the firefighter rises out of the seat.

3.3.39. CREW AREA - REAR FACING OUTBOARD SEAT POSITIONS

Two rear facing crew seats shall be provided; mounted one each side. Each seat shall be a Series Self-Contained Breathing Apparatus (SCBA) type seat with a fixed bottom cushion and a split head rest.

A red 3 point type, metal to metal quick release seat belt, with automatic seat belt retractor shall be provided for the seat.

Mounted in each seat there shall be a hands-free SCBA holder that is a strap-free docking station that offers a hands-free release when the firefighter rises out of the seat.

3.3.40. CENTER FORWARD FACING CREW SEATS

Two front facing crew seats shall be provided; seat shall be a Series Self-Contained Breathing Apparatus (SCBA) type seat with a fixed bottom cushion and a split head rest.

A red 3 point type, metal to metal quick release seat belt, with automatic seat belt retractor shall be provided for the seat.

Mounted in each seat there shall be a hands-free SCBA holder that is a strap-free docking station that offers a hands-free release when the firefighter rises out of the seat.

3.3.41. FORWARD FACING CREW SEAT RISER

The center forward facing seats shall be mounted on an aluminum riser that shall be mounted in the center of the cab. The riser shall match the interior of the cab and shall have a closed compartment with a door on each side opening out.

3.3.42. SEAT BELT WARNING LABELS

The cab shall be equipped with two (2) seatbelt warning labels. These labels are to be in full view of the occupants in the seated position.

3.3.43. SEAT UPHOLSTERY MATERIAL

The seats shall be upholstered with heavy duty material.

3.3.44. SEAT BELT CUSHION SENSORS AND BELT SENSORS

The apparatus shall be equipped with a seat belt warning system. The system shall consist of a Seat Belt module, dash mounted display and an audible alarm.

Seat belt and seat cushion sensors shall be provided on the six (6) specified seating positions.

3.3.45. VEHICLE DATA RECORDER

Vehicle Data Recorder (VDR) system shall be provided. The system shall include an NFPA compliant “Black Box” with reporting software that shall be capable of data storage to coincide with the NFPA requirements.

3.3.46. VEHICLE DATA RECORDER DOWNLOAD HARNESS

A download harness shall be supplied with the system to allow the data to be downloaded to a computer.

3.3.47. VEHICLE FLUIDS PLATE

As required by NFPA-1901, the contractor shall affix a permanent plate in the driver's compartment specifying the quantity and type of fluids used in the vehicle:

3.3.48. DASH & CENTER CONSOLE

The driver and officer side dash, along with the center dash, shall be covered with a custom formed overlay to create an ergonomically designed interior to be user friendly and functional for the driver and officer.

A full complement of gauges shall be provided. The starter and ignition switches shall also be integrated into the gauge panel for easier access.

All warning lights and indicators shall be located in the gauge itself or in the lower center portion. Each gauge shall be equipped with an international symbol that is easily recognizable, denoting the system being monitored. Instrumentation shall be backlit for easy identification when activated.

The transmission gear selector shall be located for easy driver access.

The dash assembly shall contain a removable panel to access the main chassis wiring circuits and breaker panels.

3.3.49. DRIVER'S DASHBOARD PANEL

The main instrument panel shall be centered in front of the driver and shall be mechanically fastened to the main dash assembly. The panel shall contain the primary gauges, an instrument warning light cluster and the ignition and engine start switches.

An ignition and engine start switch shall be located on the driver's side dash panel.

Each gauge shall have a raised glass lens with a finish trim ring and be backlit by integral white LED's. Each gauge shall also possess an integral warning light with a pre-programmed warning light set point. Each gauge warning indicator shall be capable of activating an audible alarm inside the dashboard.

The primary gauges shall consist of:

- Vehicle speedometer
- Engine tachometer
- Engine oil pressure; low oil pressure warning
- Engine coolant temperature; high engine temp warning
- Transmission oil temperature; high transmission fluid temp warning
- Vehicle battery voltage; low voltage warning
- Front air system gauge; low air pressure warning at 65 psi
- Rear air system gauge; low air pressure warning at 65 psi
- Fuel level; low fuel level warning
- Air cleaner restriction gauge with warning
- DEF level with low level warning

3.3.50. MULTIPLEX DISPLAY

A display screen shall be provided.

3.3.51. INDICATOR CLUSTER

The driver's dashboard panel shall consist of gauges, an instrument warning light cluster, and an alarm panel.

On the Road displays include:

- Odometer, trip information, fuel economy information; and all gauge data.
- Two (2) trip displays for miles and hours that are capable of being reset.
- Fuel data screen.

The displays that can be accessed when the parking brake is set include:

- Engine hours as maintained by the engine ECU
- Service Alarm screens to report miles to next service or miles past required service.
- Warning messages.
- Diagnostic screens shall test the instrumentation system to verify it is working correctly.

Listed below are the defined telltales and their indicators.

- "Right And Left Directional" arrows
- "Ignition ON" Indicator
- "Hi Beam" indicator
- "Battery ON" indicator
- "Parking Brake ON" indicator
- "Check Transmission" indicator
- "Stop Engine" indicator
- "Check Engine" indicator
- "ABS Warning" indicator
- "Low Coolant Level"
- "Fuel Restriction" indicator
- "Water In Fuel" indicator
- "Fasten Seat Belts" indicator
- "Fast Idle" Indicator
- "Do Not Move Truck" indicator
- "DPF Regeneration"
- "Exhaust High Temperature"
- "Engine Diagnostic Fault"
- "PTO Engaged"
- "Ok to Pump"
- "Auto Traction Control"

3.3.52. SWITCH PANEL

The driver's panel shall be capable of housing guarded type rocker switches. Examples of the switches that shall be installed in this area are automatic chains, fan clutch override, ATC, etc.

3.3.53. PUMP SHIFT CONTROL

The pump shift control and pump engaged indicator light shall be mounted in the driver's panel. This control shall be equipped with a mechanical type lock to prevent inadvertent activation or de-activation. The lever positions and indicator light shall be clearly marked.

3.3.54. OFFICER DASH

There shall be a flat surface area in front of the officer for use with such items as a lap top computer. There shall be a bracket, wiring, and antenna pre-installed for an MDT unit. There shall be a glove box.

3.3.55. CAB HEATER/DEFROSTER

A high output heater/defroster shall be provided. The unit shall supply heat to the cab and provide windshield defrosting through adjustable louvers. The heater/defroster shall be mounted in the center overhead console area, near the windshield. Control shall be located on the front of the heater/defroster unit. In reach of the driver.

3.3.56. CAB TILT ASSEMBLY

A hydraulic cab lift system shall be provided, consisting of an electric-powered hydraulic pump, fluid reservoir, dual lift cylinders, remote cab lift controls and all necessary hoses and valves.

The hydraulic cylinders shall be equipped with a velocity fuse that protects the cab from accidentally descending when the cab is in the tilt position.

Hydraulic cylinders shall be detachable to allow removal of the engine for major service. A remote cable operated mechanical cylinder stay bar and release shall be provided to insure a positive lock in the tilted position.

The cab tilt device shall be both electrically and hydraulically interlocked to prevent inadvertent activation of the cab tilt system.

- A "CAB NOT LATCHED" indicator shall be provided in the cab dash-warning cluster.
- A dual switch control system shall be provided for the cab tilt, located on the passenger side of the vehicle in the pump panel area.

The cab tilt control shall be equipped with an interlock that shall disable the cab tilt system in the event the parking brake is not applied.

3.3.57. CHASSIS FRAME ASSEMBLY

The chassis frame shall be fabricated at the manufacturer's facility.

The frame shall consist of two (2) channels fastened together by cross members. All structural fasteners used in the frame shall be Grade 8 hardware. Hardened steel washers shall be used under all bolt heads and nuts to avoid stress concentrations. Top flange shall be free of bolt heads. All spring hangers shall be machined steel castings. Weldment type chassis and the use of Huck shall never be used.

Each main frame rail shall be fabricated from 110,000 PSI minimum yield steel.

The cross members, axles and steering gear, shall be finish painted before installation of any electrical wiring, fuel system components, or air system components. All components or brackets fastened to the frame rails shall be cleaned, primed and painted prior to being attached to the frame rails.

3.3.58. FRONT BUMPER

A 12" high, 101" wide, two (2) ribbed, bright finish stainless steel front bumper shall be provided. The bumper shall be a wrapped design to match the contour of the front cab sheet.

3.3.59. BUMPER EXTENSION

The bumper shall be extended 18" with a polished aluminum tread plate gravel shield enclosing the top and ends.

3.3.60. STORAGE WELL - CENTER

One (1) storage well, shall be installed in the gravel shield. This storage well shall be center mounted between the chassis frame rails. The bottom of the storage well shall have a minimum of four (4) drain holes.

The center front bumper, hose well shall be furnished with a diamond plate hinged cover. A d-ring handle shall be used to open the lid with a gas shock to hold open. The lid shall have a 3” notch for hose on the discharge side.

3.3.61. FRONT TOW EYES

Two (2) painted steel, tow eyes shall be fastened directly to the frame web, extending below the bumper. The tow eyes shall be fastened with grade 8 bolts and nuts. They shall be round and free of sharp edges. They shall be installed so that the approach angle is not affected.

3.3.62. FRONT AXLE

The front axle shall be rated at not less than 18,000lbs.

3.3.63. FRONT BRAKES

Brakes shall be “S” Cam 16-1/2” x 6” and shall be full air actuated with automatic slack adjusters.

Premium oil seals with viewer glass shall be provided on the front axle.

3.3.64. FRONT SUSPENSION

Front suspension shall be progressive rate front leaf springs. The spring shall be permanently pinned at the front and have a shackle double pinned mounting at the rear.

The capacity at ground shall be not less than 18,000 lb. All springs shall be positively restrained from rotating in brackets and shackles.

3.3.65. FRONT SHOCK ABSORBERS

The front suspension system shall be equipped with double acting hydraulic shock absorbers.

3.3.66. REAR AXLE

Rear axle shall have capacity of 24,000 lbs. (Minimum). Axle shall be a single reduction type and have a gear ratio as required. Oil seals shall be provided as standard equipment.

3.3.67. REAR BRAKES

Brakes shall be “S” Cam, 16-1/2” x 7” size and shall be full air actuated with automatic slack adjusters.

3.3.68. REAR AXLE TOP SPEED

The rear axles shall be geared for a vehicle top speed of approximately 68 MPH, in accordance with NFPA sections 4.15.2 and 4.15.3.

3.3.69. REAR SUSPENSION

The rear suspension shall have a minimum 24,000 lb. rating.

3.3.70. BRAKE SYSTEM

A dual circuit, air operated braking system, meeting the design and performance requirements of FMVSS-121 and the operating test requirements of NFPA 1901 current edition shall be installed. It shall be direct air type with dual air treadle in the cab. The system shall be powered by an engine mounted, gear driven air compressor protected by a heated air dryer.

The air system shall be plumbed with reinforced, air brake tubing/hose in conformance to SAE J 844-94, Type B and U.S.D.O.T. standards. The compressor discharge shall be plumbed with stainless steel braided hose lines with a Teflon lining. Eaton Synflex Eclipse Air Brake tubing shall be run along

the inside frame rails and connected with push to connect type fittings that meet or exceed all industry standards. All Synflex shall be secured with non-conductive, corrosion resistant strapping mounted with standoff fasteners. Cord reinforced rubber hose lines with brass fittings shall be installed from the frame rails to axle mounted air connections.

The air system shall provide a rapid air build-up feature and low-pressure protection valve with light and buzzer, designed to meet the requirements of NFPA 1901, current edition.

3.3.71. ABS SYSTEM

An Anti-Skid Braking System (ABS) shall be provided to improve braking control and reduce stopping distance. This braking system shall be fitted to all of the axles. All electrical connections shall be environmentally sealed, water, weatherproof, and vibration resistant.

The system shall constantly monitor wheel behavior during braking. Sensors on each wheel shall transmit wheel speed data to an electronic processor which shall sense approaching wheel lock causing instant brake pressure modulation up to 5 times per second in order to prevent wheel lockup. Each wheel shall be individually controlled.

3.3.72. BRAKE AIR RESERVOIRS

There shall be a minimum of three (3) air reservoirs installed in conformance with best automotive practices. Reservoir capacity total shall be a minimum of 4300 cubic inches.

For ease of daily maintenance, each air system reservoir shall be equipped with a brass 1/4 turn drain valve.

A Rockwell/Wabco System Saver 1200 heated air dryer shall be furnished. An automatic moisture ejector on the primary or wet tank shall also be furnished

3.3.73. AIR LINES

The entire chassis air system shall be plumbed utilizing reinforced, Synflex air lines. All of the airlines shall be color coded to correspond with an air system schematic and shall be adequately protected from heat and chafing.

3.3.74. AIR COMPRESSOR

Air compressor shall be a Wabco brand, minimum of 18.7 cubic feet per minute capacity. Air brake system shall be the quick build-up type. The air compressor discharge line shall be stainless steel braid reinforced Teflon hose.

A pressure protection valve shall be installed to prevent the use of air horns or other air operated devices should the air system pressure drop below 80 psi (552 kPa).

The chassis air system shall meet NFPA 1901, latest edition for rapid air pressure build-up within sixty (60) seconds from a completely discharged air system. This system shall provide sufficient air pressure so that the apparatus has no brake drag and is able to stop under the intended operating conditions following the sixty (60) seconds build-up time.

3.3.75. BRAKE TREADLE VALVE

A dual brake treadle valve shall be mounted on the floor in front of the driver. The brake control shall be positioned to provide unobstructed access and comfort for the driver.

3.3.76. PARKING BRAKE

Parking brake shall be of the spring-actuated type, mounted on the rear axle brake chambers. The parking brake control shall be mounted on the cab center instrument panel, in easy reach of driver. A red indicator light shall be provided in the driver dash panel that shall illuminate when the parking brake is applied.

3.3.77. FRONT WHEELS & TIRES

Two (2) polished aluminum wheels shall be supplied and installed on the front axle. The wheels shall be highly polished on the outboard side.

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The front tires shall be all-weather tread, tubeless radial tires.

3.3.78. FRONT WHEEL TRIM

The front axle shall be trimmed with mirror finish, 304L grade, non-corrosive stainless steel 'baby moon' hub caps with an opening for viewing the oil seal cover, and bright finished nut covers.

3.3.79. REAR TIRES

The rear tires shall be traction tread, tubeless radial tires.

Single-rear axle GAWR using these tires shall be not less than 24,000 lbs. @ 120 psi.

3.3.80. ALUMINUM WHEELS

Two (2) polished aluminum wheels shall be supplied in the outer wheel position of the rear axle. The wheels shall be highly polished on the outboard side.

3.3.81. REAR WHEEL TRIM

The rear axle shall be trimmed with mirror finish, 304L grade non-corrosive stainless steel "Lincoln Hat" hub cover and bright finished nut covers.

3.3.82. TIRE PRESSURE MONITORING DEVICES

Each tire shall be equipped with an LED tire alert pressure management system (Vecsafe equal) that shall monitor tire pressure. A chrome plated brass sensor shall be provided on the valve stem of each tire.

3.3.83. ENGINE

Engine shall be a Cummins, Model ISL9 450, or equivalent diesel, turbo-charged, electronically controlled, per the following specifications.

- Max. Horsepower 450 HP @ 2100 RPM
- Governed Speed 2200 RPM
- Peak Torque 1250 lb. ft. @ 1400 RPM
- Cylinders Six (6)
- Operating Cycles Four (4)
- Bore & Stroke 4.49 x 5.69 in.
- Displacement 543 cu. in.
- Compression Ratio 16.6:1
- Governor Type Limiting Speed

- Drive line Size 1760.

Engine oil filters shall be engine manufacturers branded or approved equal. Engine oil filters shall be accessible for ease of service and replacement.

A fuel/water separator shall be provided.

3.3.84. ENGINE CHASSIS CERTIFICATION

The engine shall be installed in accordance with engine manufacturer's instructions. The apparatus manufacturer shall be able to furnish proof of engine installation approval by the engine manufacturer.

3.3.85. COOLING/RADIATOR

The radiator and the complete cooling system shall meet or exceed NFPA and engine manufacturer cooling system standards.

The radiator core shall be of adequate size to properly cool the engine per the engine manufacturer's requirements. The radiator shall be compatible with commercial antifreeze solutions.

The cooling system shall include a surge tank mounted to the top of the radiator framework that shall remove air in the system. The surge tank shall be equipped with a sight glass to monitor the level of coolant. The radiator shall be equipped with a dual seal cap that shall allow for expansion and recovery of coolant into a separate integral chamber.

A drain port shall be located at the lowest point of the cooling system and/or the bottom of the radiator to permit complete flushing of the coolant from the system.

Extended life engine coolant shall provide anti-freeze protection to -30° F. The mixture shall be per the engine manufacture's specifications.

The engine cooling system shall have an inline coolant filter that shall have a shut off valve for ease of maintenance.

The engine cooling system shall be certified by the engine manufacturer to meet cooling index requirements for a minimum ambient temperature or 110-degrees Fahrenheit.

3.3.86. TRANSMISSION COOLER

A transmission oil cooler shall be provided using engine coolant to control the transmission oil temperature.

3.3.87. RADIATOR SKID PLATE

The radiator installation shall include a heavy-duty radiator skid plate to protect the radiator from debris or obstructions under the chassis. The skid plate shall be designed so the angle of approach is not affected.

3.3.88. CHARGE AIR COOLER

The charge air cooler shall be constructed of aluminum with cast aluminum side tanks.

3.3.89. COOLING SYSTEM FAN

The engine cooling system shall incorporate a heavy duty fan, installed on the engine and include a shroud.

The fan shall be equipped with an air operated clutch fan, which shall activate at a pre-determined temperature range.

Recirculation shields shall be installed to ensure that air which has passed through the radiator is not drawn through it again.

3.3.90. COOLANT HOSES

The entire chassis cooling system shall have premium rubber hoses. All clamps to be stainless steel worm drive type clamps.

3.3.91. ENGINE BRAKE

An engine brake shall be supplied, with an engine brake control switch with, low, med, high, settings

The brake lights shall illuminate when the engine brake is in operation.

The engine brake shall be inoperative when the chassis is in pump mode.

3.3.92. ENGINE FAST IDLE

A fast idle for the electronic controlled engine shall be provided. The fast idle shall be controlled by an ON/OFF switch on the dash.

An electronic interlock system shall prevent the fast idle from operating unless the transmission is in "Neutral" and the parking brake is fully engaged. If the fast idle control is used in conjunction with a specified engine/transmission driven component or accessory, the fast idle control shall be properly interlocked with the engagement of the specified component or accessory.

3.3.93. AIR CLEANER

An engine air cleaner shall be provided. The air cleaner shall include a dry type element and shall be installed in accordance with the engine manufacturer's recommendations. The air cleaner shall be located to the rear of the engine, with streamline air pipes and hump hose connections from the inlet to the air cleaner and from the air cleaner to the turbo. The air cleaner shall be easily accessible when the cab is tilted. The air cleaner shall be plumbed to the air intake system that shall include a self-sealing connection between the cab and air cleaner assembly to allow the cab to be tilted.

3.3.94. SPARK ARRESTOR

A spark arrestor shall be installed in the chassis air intake system. This arrestor shall be mounted behind the intake grille to filter out airborne embers. The spark arrestor housing must be easily accessible when the cab is tilted.

3.3.95. ACCELERATOR CONTROL

A floor mount accelerator pedal shall be installed on the floor in front of the driver. The pedal shall be positioned for comfort with ample space for fire boots and adequate clearance from the brake pedal control.

3.3.96. REMOTE THROTTLE CONTROL HARNESS

An apparatus interface wiring harness for the engine shall be supplied with the chassis. The harness shall include a connector for connection to the chassis harness which shall terminate in the left frame rail behind the cab for reconnection to required throttle control harnesses. The harness shall contain necessary connectors for a pressure governor and a multiplexed gauge. Separate circuits shall be included for pump controls, “Pump Engaged” and “OK to Pump” indicator lights, open compartment ground, start signal, park brake ground, ignition signal, master power, customer ignition, air horn solenoid switch, high idle switch and high idle indication light.

An apparatus interface wiring harness shall also be included which shall be wired to the cab harness interface connectors and shall incorporate circuits with relays to control pump functions. This harness shall control the inputs for the transmission lock up circuits, governor/hand throttle controls and dash display which shall incorporate “Pump Engaged” and “OK to Pump” indicator lights. The harness shall contain circuits for the apparatus builder to wire in a pump switch.

3.3.97. ENGINE PROGRAMMING REMOTE THROTTLE

The engine ECM (Electronic Control Module) discreet wire remote throttle circuit shall be turned off for use with a J1939 based pump controller or when the discreet wire remote throttle controls are not required.

3.3.98. TRANSMISSION

The transmission shall be a 5-speed automatic transmission with electronic controls.

The transmission shall be equipped with a lock-up control circuit that shall automatically shift the transmission into 4th gear lock-up when the pump is shifted into gear.

The transmission shall be able to shift from first through fifth gear without operator intervention. The chassis shall be geared for the top speed in 5th gear.

3.3.99. TRANSMISSION OIL LEVEL SENSOR

The transmission shall be equipped with the oil level sensor (OLS); this sensor shall allow the operator to obtain an indication of the fluid level from the shift selector. The sensor display shall provide the following checks, correct fluid level, low fluid level and high fluid level.

3.3.100. PARK TO NEUTRAL

The transmission, upon application of the parking brake, shall automatically shift into neutral.

3.3.101. PRESELECT PROGRAMMING

The transmission shall automatically downshift when the secondary engine brake is active.

3.3.102. DRIVE LINES

Drive lines shall be Dana (Spicer) 1760 heavy duty series or equal, with “glide coat” splines on all slip shafts

3.3.103. DIESEL EXHAUST FLUID TANK

A five (5) gallon diesel exhaust fluid (DEF) tank shall be provided and installed. The tank shall be mounted in the area of the battery box and shall be accessible through a door in the crew area step well.

The tank shall include an internal heater that will be fed by engine coolant directly from the engine block to ensure it is always kept at the proper temperature per EPA requirements. The tank shall include a temperature sensor to control the flow of the engine coolant from the heater valve to the DEF tank.

A DEF fluid level senor shall be provided with the DEF tank and connected to the level gauge on the dashboard.

3.3.104. EXHAUST SYSTEM

The exhaust system shall be installed in accordance with the engine manufacturer's requirements and meet all Environmental Protection Agency and State noise level requirements. Exhaust system components shall be securely mounted and easily removable.

The diesel particulate filter/muffler shall be fabricated from stainless steel and of a size compatible with the engine exhaust discharge.

Exhaust tubing shall be a minimum of 16 gauge stainless steel from the turbocharger on the engine to the inlet of the diesel particulate filter. Any flexible exhaust tubing shall be HDT stainless steel type. To minimize heat build-up, exhaust tubing within the engine compartment shall be wrapped with an insulating material. Exhaust shall be wrapped from the turbocharger to the entrance of the muffler. Material shall be held in place with worm gear type clamps.

An exhaust diffuser shall be provided to reduce the temperature of the exhaust as it exits the tailpipe.

Separate "regeneration" enable and prohibit switches shall be provided under the dash board on the driver's side. Each switch shall be provided with a spring loaded protective cover and shall be clearly marked as to function.

3.3.105. SELECTIVE CATALYTIC REDUCTION SCR)

The vehicle shall be equipped with SCR technology that uses a urea based diesel exhaust fluid (DEF) and a catalytic converter to significantly reduce oxides of nitrogen (NOx) emissions.

The SCR system shall reduce levels of NOx (oxides of nitrogen emitted from engines) by injecting small quantities of diesel exhaust fluid (DEF) into the exhaust upstream of a catalyst, where it vaporizes and decomposes to form ammonia and carbon dioxide. The ammonia (NH3), in conjunction to the SCR catalyst, converts the NOx to harmless nitrogen (N2) and water (H2O).

The exhaust tailpipe extending from the SCR catalyst to the side of the vehicle shall be constructed from 16-gauge aluminized steel tubing. The exhaust discharge shall be on the officer side of the apparatus forward of the rear axle.

3.3.106. FUEL TANK

Fuel tank shall be a minimum of fifty (50) gallon capacity. It shall have a minimum fuel filler neck of 2" ID. A ½" minimum diameter drain plug shall be provided. The tank shall be dot certified.

The fuel tank shall be installed behind the rear wheels between the frame rails.

The fuel tank shall meet all FHWA 393.67 requirements including a fill capacity of 95% of tank volume.

3.3.107. FUEL FILTER/WATER SEPARATOR

A fuel filter/water separator shall be provided in the fuel system. A "water in fuel" indicator shall be provided on the dash.

3.3.108. FUEL POCKET

A fuel fill shall be provided in the left side rear wheel well area. A Cast Products heavy duty cast aluminum spring loaded hinged fill door shall be provided.

A label indicating “Ultra Low Sulfur Diesel Fuel Only” shall be provided adjacent to the fuel fill.

3.3.109. POWER STEERING

A power steering system shall be provided on the chassis. Steering system shall utilize components with a rating equal to the front axle capacity. Cramp angle of the steering system shall be provided in bid. Desired is not less than 50-degrees left and right.

3.3.110. STEERING COLUMN

The steering column shall be a tilt and telescope column. A lever mounted on the side of the column shall control the tilt and telescope features.

The steering shaft from the column to the miter box shall have a rubber boot to cover the shaft slip and a second rubber boot to seal the passage hole in the floor.

There shall be a self-canceling lever that shall control the following functions:

- Left and right turn signals
- High beam activation
- Hazard warning switch
- Two speed with intermittent windshield wiper control
- Windshield washer control
-

3.3.111. STEERING WHEEL

The steering wheel shall be padded, minimum 18" diameter, with a center hub mounted horn button.

3.3.112. ROAD SAFETY KIT

A road safety kit shall be furnished with the following equipment:

- 2 1/2 lb. B-C fire extinguisher
- Triangle safety reflectors.

3.3.113. CHASSIS ELECTRICAL SYSTEM

The electrical system shall be multiplexed; bidders are required to explain their system in the bid proposal. All electrical wiring in the chassis shall be GXL cross link insulated type. Wiring is to be color coded and function coded. Wiring harnesses shall be routed in protective, heat resistant loom, securely and neatly installed.

All external harness interfaces shall be of a sealed type connection to ensure a proper connection. The cab/chassis and the chassis/body connection points shall be mounted in accessible locations. Complete chassis wiring schematics shall be supplied with the apparatus.

3.3.114. WIRING HARNESS DESCRIPTION

The wiring harness contained on the chassis shall be designed to utilize wires of stranded copper or copper alloy of a gauge rated to carry 125% of maximum current for which the circuit is protected

without exceeding 10% voltage drop across the circuit. Wiring shall be uniquely identified by color code or circuit function code, labeled at a minimum of every three (3) inches. The identification of the wiring shall be referenced on a wiring diagram.

The covering of harnesses shall be heat and moisture resistant loom.

All circuits shall conform to SAEJ1292. All circuits must be provided with low voltage over current protective devices.

3.3.115. DIRECT GROUNDING STRAPS

Direct grounding straps shall be provided and mounted as necessary.

3.3.116. EMI/RFI PROTECTION

The apparatus shall incorporate the latest designs in the electrical system with state of the art components to insure that radiated and conducted electromagnetic interference (EMI) and radio frequency interference (RFI) emissions are suppressed at the source.

The apparatus proposed shall have the ability to operate in the environment typically found in fire ground operations with no adverse effects from EMI/RFI.

EMI/RFI susceptibility is controlled by utilizing components that are fully protected and wiring that utilizes shielding and loop back grounds where required. The apparatus shall be bonded through wire braided ground straps. Relays and solenoids that are suspect to generating spurious electromagnetic radiation are diode protected to prevent transient voltage spikes.

In order to fully prevent the radio frequency interference the Newport Fire Department may be requested to provide a listing of the type, power output, and frequencies of all radio and bio medical equipment that is proposed to be used on the apparatus.

3.3.117. VOLT ELECTRICAL SYSTEM TESTING

The apparatus low voltage electrical system shall be tested and certified by the manufacturer. The certification shall be provided with the apparatus. All tests shall be performed with air temperature between 0°F and 100°F.

The following three (3) tests shall be performed in order. Before each test, the batteries shall be fully charged.

3.3.118. TEST #1-RESERVE CAPACITY TEST

The engine shall be started and kept running until the engine and engine compartment temperatures are stabilized at normal operating temperatures and the battery system is fully charged. The engine shall be shut off and the minimum continuous electrical load shall be activated for 10 minutes. All electrical loads shall be turned off prior to attempting to restart the engine. The battery system shall then be capable of restarting the engine. Failure to restart the engine shall be considered a test failure.

3.3.119. TEST #2-ALTERNATOR PERFORMANCE TEST AT IDLE

The minimum continuous electrical load shall be activated with the engine running at idle speed. The engine temperature shall be stabilized at normal operating temperature. The battery system shall be tested to detect the presence of battery discharge current. The detection of battery discharge current shall be considered a test failure.

3.3.120. TEST #3-ALTERNATOR PERFORMANCE TEST AT FULL LOAD

The total continuous electrical load shall be activated with the engine running up to the engine manufacturers governed speed. The test duration shall be a minimum of 2 hours. Activation of the load management system shall be permitted during this test. However, an alarm sounded due to excessive battery discharge, as detected by the system, or a system voltage of less than 11.7 volts DC for a 12 volt system, for more than 120 seconds, shall be considered a test failure.

3.3.121. LOW VOLTAGE ALARM TEST

Following completion of the preceding tests, the engine shall be shut off. The total continuous electrical load shall be activated and shall continue to be applied until the excessive battery discharge alarm is activated.

The battery voltage shall be measured at the battery terminals. With the load still applied, a reading of less than 11.7 volts shall be considered a test failure. The battery system shall then be able to restart the engine.

At time of delivery, documentation shall be provided with the following information:

- Documentation of the electrical system performance test
- A written load analysis of the following
- Nameplate rating of the alternator
- Alternator rating at idle while meeting the minimum continuous electrical load
- Each component load comprising the minimum continuous electrical load
- Additional loads that, when added to the minimum continuous load, determine the total connected load
- Each individual intermittent load

3.3.122. DATA DOWNLOADER KIT

A Downloader Kit shall be provided to download data from the on board multiplex system. This software shall have the ability to view system input/output (I/O) information, and include a connection from a computer to the vehicle.

3.3.123. CHASSIS DIAGNOSTICS SYSTEM

Diagnostic ports shall be accessible while standing on the ground and located inside the driver's side door near the steering column. The diagnostic panel shall allow diagnostic tools such as computers to connect to various vehicle systems for improved troubleshooting providing a lower cost of ownership. Diagnostic switches shall allow engine and ABS systems to provide blink codes should a problem exist.

The diagnostic system shall include the following:

- A single port to monitor the engine, transmission and ABS system and diagnostics of the roll sensor (if applicable)
- Engine diagnostic switch (blink codes)
- ABS diagnostic switch (blink codes)
- Allison Transmission Codes (through touch pad shifter)

3.3.124. VOLTAGE MONITOR SYSTEM

A voltage monitoring system shall be provided to indicate the status of the battery system connected to the vehicle's electrical load. The system shall provide visual and audible warning when the system voltage is below or above optimum levels.

The alarm shall activate if the system falls below 11.8 volts DC for more than two (2) minutes.

3.3.125. INDICATOR LIGHT AND ALARM PROVE-OUT SYSTEM

A system shall be provided which automatically tests basic indicator lights and alarms located on the cab instrument panel.

3.3.126. ELECTRICAL HARNESS REQUIREMENT

To ensure dependability, all 12-volt wiring harnesses installed by the manufacturer shall conform to the following specifications:

- SAE J 1128 - Low tension primary cable
- SAE J 1292 - Automobile, truck, truck-tractor, trailer and motor coach wiring
- SAE J 163 - Low tension wiring and cable terminals and splice clips
- SAE J 2202 - Heavy duty wiring systems for on-highway trucks
- NFPA 1901 - Standard for automotive fire apparatus
- FMVSS 302 - Flammability of interior materials for passenger cars, multipurpose passenger vehicles, trucks and buses
- SAE J 1939 - Serial communications protocol
- SAE J 2030 - Heavy-duty electrical connector performance standard
- SAE J 2223 - Connections for on board vehicle electrical wiring harnesses
- NEC - National Electrical Code
- SAE J 561 - Electrical terminals - Eyelet and spade type
- SAE J 928 - Electrical terminals - Pin and receptacle type A

For increased reliability and harness integrity, harnesses shall be routed throughout the cab and chassis in a manner which allows the harnessing to be laid into its mounting location. Routing of harnessing which requires pulling of wires through tubes is never allowed at the manufacturer.

Wiring shall be run in loom or conduit where exposed, and have grommets or other edge protection where wires pass through metal. Wire colors shall be integral to each wire insulator and run the entire length of each wire. Harnessing containing multiple wires and uses a single wire color for all wires shall not be allowed. Function and number codes shall be continuously imprinted on all wiring harness conductors at 3.00" intervals. All wiring installed between the cab and into doors shall be protected by a wire conduit to protect the wiring. Exterior exposed wire connectors shall be positive locking, and environmentally sealed to withstand elements such as temperature extremes, moisture and automotive fluids. Electrical wiring and equipment shall be installed utilizing the following guidelines:

- All holes made in the roof shall be caulked with silicon. Large fender washers, liberally caulked, shall be used when fastening equipment to the underside of the cab roof
- Any electrical component that is installed in an exposed area shall be mounted in a manner that shall not allow moisture to accumulate in it. Exposed area shall be defined as any location outside of the cab or body
- For low cost of ownership, electrical components designed to be removed for maintenance shall be quickly accessible. For ease of use, a coil of wire shall be provided behind the appliance to allow them to be pulled away from the mounting area for inspection and service work
- Corrosion preventative compound shall be applied to non-waterproof electrical connectors located outside of the cab or body. All non-waterproof connections shall require this compound in the plug to prevent corrosion and for easy separation of the plug
- Any lights containing non-waterproof sockets in a weather-exposed area shall have corrosion preventative compound added to the socket terminal area
- All electrical terminals in exposed areas shall have protective coating applied completely over the metal portion of the terminal

- Rubber coated metal clamps shall be used to support wire harnessing and battery cables routed along the chassis frame rails
- Heat shields shall be used to protect harnessing in areas where high temperatures exist Harnessing passing near the engine exhaust shall be protected by a heat shield
- Cab and crew cab harnessing shall not be routed through enclosed metal tubing. Dedicated wire routing channels shall be used to protect harnessing therefore improving the overall integrity of the vehicle electrical system. The design of the cab shall allow for easy routing of additional wiring and easy access to existing wiring
- All standard wiring entering or exiting the cab shall be routed through sealed bulkhead connectors to protect against water intrusion into the cab.

3.3.127. BATTERY CABLE INSTALLATION

All 12-volt battery cables and battery cable harnessing installed by the apparatus manufacturer shall conform to the following requirements:

- SAE J 1127 - Battery Cable
- SAE J 561 - Electrical terminals, eyelets and spade type
- SAE J 562 - Nonmetallic loom
- SAE J 836 A - Automotive metallurgical joining
- SAE J 1292 - Automotive truck, truck-tractor, trailer and motor coach wiring
- NFPA 1901 - Standard for automotive fire apparatus

Battery cables and battery cable harnessing shall be installed utilizing the following guidelines:

- Splices shall not be allowed on battery cables or battery cable harnesses
- For ease of identification and simplified use, battery cables shall be color coded. All positive battery cables shall be marked red in color. All negative battery cables shall be black in color
- For ease of identification, all positive battery cable isolated studs throughout the cab and chassis shall be red in color
- For increased reliability and reduced maintenance, all electrical buss bars located on the exterior of the apparatus shall be coated to prevent corrosion. An operational test shall be conducted to ensure that any equipment that is permanently attached to the electrical system is properly connected and in working order

3.3.128. ALTERNATOR

There shall be a brushless, serpentine belt driven alternator with enough amps to handle all load, 275 amp minimum.

The alternator installation shall be designed to provide maximum output at engine idle speed, by using “Remote Sense” in order to meet the minimum continuous electrical load of the apparatus as required.

The alternator shall carry a 3 Year/Unlimited Mile warranty.

3.3.129. BATTERY SYSTEM

A single battery system shall be provided.

3.3.130. BATTERY STORAGE

The battery box trays shall be stainless steel to reduce the corrosive potential of the tray. The battery hold-down and brackets and hardware shall also be made of stainless steel.

3.3.131. BATTERY DISCONNECT SWITCH

The chassis batteries shall be wired in parallel to a single 12 volt electrical system, controlled through a heavy duty master disconnect switch. The master disconnect switch shall be located within easy access of the driver upon entering or exiting the cab.

3.3.132. BATTERY JUMPER STUDS

A set of battery jumper studs shall be provided to allow the battery system to be jump started or charged from an external source. The studs shall be located on the bottom of the battery box on the driver's side of the chassis. Each stud shall be equipped with both a rubber protector cap.

3.3.133. AIR SHORELINE CONNECTION

An air connection with auto eject shall be plumbed in to the truck air system with check valve.

3.3.134. 120 VOLT SHORELINE CONNECTION

A 120 volt shoreline connection with auto eject and weather tight cover shall be provided.

3.3.135. SHORELINE POWER INLET PLATE

A shoreline power receptacle information plate shall be permanently affixed at or near the power inlet. The plate shall indicate the following;

- Type of Line Voltage
- Current Rating in Amps Power Inlet Type (DC or AC)

The shoreline receptacle shall be located in the area directly adjacent to the driver's side cab door.

3.3.136. BATTERY CHARGER

An electronic battery charge/power supply with 40 amp output shall be installed.

3.3.137. SHORELINE RECEPTACLE

Seven (7) 120 volt outdoor type receptacles with flip covers shall be located in the specified body compartment as directed. The receptacles shall be wired into the shoreline receptacle to provide a 120 volt power source for fire department equipment.

3.3.138. CAB OUTLETS

There shall be 4 duplex outlets in the cab, location to be decided at pre-meeting.

3.3.139. LIGHTING - CAB INTERIOR

Four (4) combination red/white halogen dome lights shall be furnished in the cab, two (2) in the forward section and two (2) in the rear section. Each dome light shall have an integral selector switch. Each dome light shall also activate when the respective, adjacent cab door is opened.

3.3.140. REMOTE CONTROLLED CAB SPOTLIGHT

A GoLight model # 2020 remote controlled spotlight shall be provided and mounted on the driver side of the cab roof. The GoLight spotlight shall be equipped with a 65 watt spotlight and shall be controlled from the cab. The wired remote control shall be mounted in easy reach of the driver as directed by the fire department.

A GoLight model # 2020 remote controlled spotlight shall be provided and mounted on the officer side of the cab roof. The go light spotlight shall be equipped with a 65 watt spotlight and shall be controlled from the cab. The wired remote control shall be mounted in easy reach of the officers or as directed by the fire department.

3.3.141. "DO NOT MOVE APPARATUS" WARNING LIGHT

A 1" round, red flashing warning light with an integral audible alarm shall be functionally located in the cab to signal when an unsafe condition is present; such as an open cab or body compartment door, an extended ladder rack, a deployed stabilizer, an extended light tower or any other device that may be opened, extended or deployed and might cause damage to the apparatus if it is moved.

This light and buzzer shall be activated through the parking brake switch to signal when the parking brake is released. This light shall be labeled "DO NOT MOVE TRUCK".

3.3.142. 12 VOLT ACCESSORY CIRCUIT - CAB DASH

One (1) dedicated circuit; 12 volt, 30 amp, power and ground shall be provided in the cab dash. The circuit shall be for future installation of radios or accessories.

3.3.143. BACKUP CAMERA

There shall be a video system with 7” color monitor provided on the apparatus. The monitor for the back-up camera shall be mounted on top of the engine doghouse within view of the driver to aide in backing up the apparatus. .

A color high resolution observation camera shall be provided. The backup camera shall be mounted at the rear of the apparatus beneath the hosebed.

A 12-gauge stainless steel trim guard shall be affixed to the wall behind the camera with a flange over the top of the camera housing to aid in protecting the camera.

3.3.144. HEADLIGHTS CLUSTER

Two (2) dual, rectangular, halogen headlight modules in bright finish bezels shall be furnished, one (1) each side, on the front of the cab. Each head light module shall incorporate an individual low beam and a high beam headlight. High beam actuation shall be controlled on the turn signal lever.

3.3.145. BUMPER MOUNTED FOG LIGHTS

Two (2) round fog / driving lights with clear lens shall be mounted recessed in the front bumper.

3.3.146. SECONDARY DUAL LIGHT MODULE

Two (2) arrow shaped, amber LED turn signals shall be provided, one (1) in each side of the dual light module above the headlights.

The NFPA required, Zone "A" lower warning lights shall be incorporated into each side dual light module noted above.

3.3.147. DOT MARKER LIGHTS AND REFLECTORS

Five (5) DOT approved Whelen (or equal) Light Emitting Diode (LED) cab marker lamps shall mounted on the top front edge of the cab roof.

Amber LED marker lights with integral reflectors shall be provided on the side of the cab adjacent to the driver’s door, one (1) each side.

Red LED marker lights with integral reflectors shall be provided at the lower side rear, one (1) each side.

Yellow LED side marker and turn lights shall be provided on the apparatus lower side, forward of rear axle, one (1) each side.

Red LED clearance lights shall be provided on the apparatus rear upper, one (1) each side at the outermost practical location.

LED 3-lamp identification bar will be provided on the apparatus rear center. The lights shall be red in color.

Yellow reflectors shall be provided on the apparatus body lower side, as far forward and low as practical, one (1) each side if the apparatus is 30' long or longer.

Red reflectors shall be provided on the apparatus rear, one (1) each side at the outermost practical location.

3.3.148. TAIL, STOP, TURN AND BACK-UP LIGHTS

Two (2) 4-1/8" x 6-1/2", LED red combination tail and stop lights, shall be mounted one each side at the rear of the body.

Two (2) 4-1/8" x 6-1/2", LED amber arrow turn signal lights, shall be mounted one each side, on a vertical plane with the tail/stop lights.

Two (2) 4-1/8" x 6-1/2", LED white back-up lights, shall be mounted one each side on a vertical plane with the turn/tail/stop signals. These lights shall activate when the transmission is placed in reverse gear.

Two (2) mounting flanges, installed one (1) on each side, shall be provided to mount the lights described above in one common mounting flange. The fourth opening shall be for the lower rear warning lights.

The lights shall be mounted in order, from top to bottom, as described above.

3.3.149. CAB STEP LIGHTS

LED surface mounted, chassis step lights shall be provided and controlled with marker light actuation. Step lights shall be located to properly illuminate all chassis access steps and walkway areas.

3.3.150. BODY STEP LIGHTS

LED surface mounted body step lights shall be provided and controlled with marker light actuation. Step lights shall be located to properly illuminate all body access steps and walkway areas.

3.3.151. DUNNAGE AREA LIGHTING

Two (2) LED surface mounted lights shall be provided in the dunnage area to provide adequate illumination of this area.

3.3.152. DECK LIGHT / WORK LIGHT

Deck light shall be provided and mounted on the front of the hose body, with a minimum output of 1000 lumens. Deck light shall illuminate with engagement of the parking brake.

3.3.153. GROUND LIGHTS

One (1) LED ground light shall be provided under each side cab door entrance step, four (4) total. The ground lights shall turn on automatically with each respective door jamb switch and also by a master ground light switch in the warning light switch console.

One (1) LED ground light shall be provided near each side pump panel running board, two (2). The ground lights shall be activated by engaging the parking brake.

One (1) LED ground light shall be provided under each rear body corner, two (2) total. The ground lights shall be activated by engaging the park brake.

3.3.154. 12 VOLT BODY ELECTRICAL SYSTEM

All electrical lines in the body shall be protected by automatic circuit breakers, conveniently located to permit ease of service. Flashers, heavy solenoids and other major electrical controls shall be located in a central area near the circuit breakers.

All lines shall be color and function coded every 3", easy to identify, oversized for the intended loads and installed in accordance with a detailed diagram. A complete wiring diagram shall be supplied with the apparatus.
Wiring shall be carefully protected from weather elements and snagging. Heavy duty loom shall be used for the entire length. Grommets shall be utilized where wiring passes through panels.

In order to minimize the risk of heat damage, wires run in the engine compartment area shall be carefully installed and suitably protected by the installation of heat resistant shielded loom.

All electrical equipment shall be installed to conform to the latest federal standards as outlined in NFPA 1901.

3.3.155. PUMP ENCLOSURE WORK LIGHTS

Two (2) lights shall be provided inside the pump enclosure providing a minimum of 20 candlepower illumination. Each light shall have their own independent switch incorporated into the light head.

3.3.156. ENGINE COMPARTMENT WORK LIGHTS

Two (2) lights shall be provided inside the engine enclosure that will provide a minimum of 20 candlepower illumination. Each light shall have their own independent switch incorporated into the light head.

3.3.157. COMPARTMENT LIGHTS - LED

Each individual, equipment storage compartment shall be equipped with the LED light fixture mounted one each side of the forward (and rear) vertical door frame.

3.3.158. NFPA AUDIBLE AND LIGHTING WARNING PACKAGE

The following warning light package shall include all of the minimum warning light and actuation requirements for the current revision of the NFPA 1901 Fire Apparatus Standard. The lighting as specified shall meet the requirements for both "Clearing Right of Way" and "Blocking Right of Way" which includes disabling all white warning lights when the apparatus is in "Blocking Right of Way" mode.

3.3.159. LIGHT PACKAGE ACTUATION CONTROLS

The entire warning light package shall be actuated with a single warning light switch located on the cab switch panel. The wiring for the warning light package shall engage all of the lights required for

"Clearing Right of Way" mode when the vehicle parking brake is not engaged. An automatic control system shall be provided to switch the warning lights to the "Blocking Right of Way" mode when the vehicle parking brake is engaged.

3.3.160. WARNING LIGHT FLASH PATTERN

All of the perimeter warning lights shall be set to an NFPA compliant flash pattern by the apparatus manufacturer.

3.3.161. UPPER LEVEL LIGHTING NFPA **ZONE A, UPPER**

A cab roof warning light bar shall be furnished and rigidly mounted on top of the cab roof.

The light bar shall be equipped with the following:

- Clear Lenses
- Two Front Corner Red Linear LED's
- Two Red Forward Facing Linear LED's
- Two White Forward Facing Linear LED's
- Two Red End Linear LED's.

If equipped, the forward facing white lights shall be automatically disabled for the "Blocking Right of Way" mode.

The light bar shall be equipped with an Opticom emitter. The Opticom emitter shall be disabled automatically for the "Blocking Right of Way" mode.

3.3.162. NFPA ZONE C, UPPER

Two (2) rotating halogen beacon lights shall be mounted one (1) each side at the rear of the body.

A red lens shall be provided on the driver side and an amber lens shall be provided on the officer side.

3.3.163. NFPA ZONES B & D REAR, UPPER

The lighting requirement for this area is covered by the lights noted in Zone "C" - Upper.

3.3.164. NFPA ZONES B & D FRONT, UPPER

The lighting requirement for this area is covered by the lights noted in Zone "A" - Upper.

3.3.165. LOWER LEVEL LIGHTING - WHELEN NFPA ZONE A, LOWER

Two (2) LED light heads shall be provided and installed one (1) each side.

Each light head shall be equipped with red LED's and a colored lens.

The lights shall be installed with a chrome plated mounting flange.

The lower Zone A warning lights shall be mounted in the custom chassis headlight bezels.

3.3.166. NFPA ZONE C, LOWER

Two (2) LED light heads shall be provided and installed one (1) each side directly below the DOT stop, tail, turn and backup lights.

Each light head shall be equipped with red LED's and a colored lens.

The lights shall be installed with a chrome plated mounting flange.

3.3.167. NFPA ZONES B & D FRONT, LOWER

Two (2) LED light heads shall be provided and installed one (1) each side.

Each light head shall be equipped with red LED's and a colored lens.

The lights shall be installed with a chrome plated mounting flange.

The lower Zone B & D warning lights shall be mounted on the sides of the custom chassis front bumper.

3.3.168. NFPA ZONES B & D MIDSHIP, LOWER

Two (2) LED light heads shall be provided and installed one (1) each side.

Each light head shall be equipped with red LED's and a colored lens.

The lights shall be installed with a chrome plated mounting flange.

3.3.169. NFPA ZONES B & D REAR, LOWER

Two (2) LED light heads shall be provided and installed one (1) each side.

Each light head shall be equipped with red LED's and a colored lens.

The lights shall be installed with a chrome plated mounting flange.

3.3.170. WARNING LIGHT SYSTEM CERTIFICATION

The warning light system specified above shall not exceed a combined total amperage draw of 45 AMPS with all lights activated in either the "Clearing Right of Way" or the "Blocking Right of Way" mode.

The warning light system shall be certified by the light system manufacturer to meet all of the requirements in the current revision of the NFPA 1901 Fire Apparatus Standard as noted in the General Requirements section of these specifications. The NFPA required "Certificate of Compliance" shall be provided with the completed apparatus.

3.3.171. TRAFFIC ADVISER WARNING LIGHT

One (1) LED "Traffic Advisor" 36", rear directional light shall be installed on the rear of the body. The light shall be equipped with six (6) lamps. The directional light shall be activated by a control module. The control module shall be conveniently located near the driver's position. The rear directional light shall be wired through the load management system of the unit.

3.3.172. ELECTRIC HORN

A single electric horn activated by the steering wheel horn button shall be furnished.

3.3.173. BACK-UP ALARM

An 87 dBA back-up alarm shall be provided and installed at the rear of the apparatus under the tailboard. The back-up alarm shall activate automatically when the transmission is placed in reverse gear and the ignition is "on".

3.3.174. AIR HORNS

Two (2) chrome plated air horns shall be at the front of the vehicle. The air horns shall be mounted in full compliance with NFPA-1901. The supply lines shall be dual 1/4" lines with equal distance from each horn.

Both air horns shall be recessed in the front bumper.

The air horns shall be controlled by a Y- chain with electrical switch, and the steering horn button on driver's side. An air horn/electric DOT horn selector switch shall be furnished on the dash for the drivers steering horn button; or the air horn shall activate with the electric horn when using the driver's horn button.

3.3.175. ELECTRONIC SIREN AND SPEAKER

One (1) 100 watt electronic siren shall be provided featuring: flush mount remote control head recessed in center dash panel as space allows, "Si-Test" self-diagnostic feature, six (6) function siren, radio repeat and public address.

The electronic siren and speaker shall meet the NFPA required SAE certification to ensure compatibility between the siren and speaker.

Two (2) 100 watt polished aluminum siren speakers shall be provided, recessed in the front bumper and wired to the electronic siren.

3.3.176. FEDERAL Q2B MECHANICAL SIREN

One (1) Federal Model #Q2B mechanical siren shall be provided to provide audible warning.

The Q2B siren shall be semi-recessed into the bumper on the driver's side. The siren shall be recessed so the front grille portion of the siren is exposed and protruding beyond the bumper.

Two (2) floor mounted foot switches shall be provided, one (1) for the officer and one (1) for the driver. A siren brake button shall be provided near the driver's position.

3.3.177. FIRECOM DIGITAL INTERCOM SYSTEM

A Firecom 5200D digital intercom system shall be provided in the front of the cab. The system shall be capable of interfacing with a two-way radio system (note: an authorized two-way radio installer shall be responsible for interfacing the intercom system with the two-way radio).

DRIVERS AND OFFICERS HEADSETS & BASE STATION FOR WIRELESS FIRECOM SYSTEM

Two (2) UHW-51 wireless under helmet radio transmit headsets, each with their own paired base station, shall be furnished for the driver and officer seating locations in the cab. The headsets shall have adjustable volume, noise-canceling electric microphone, adjustable head strap, a flex-style boom which rotates for left or right dress and a charging port to connect the 12 volt charger when the headset is not in use. The sets shall also have comfortable ComLeather ear seals.

Two (2) wireless, single user, base stations shall be connected via a 6 conductor flat RJ-6 cable to any headset port on the Firecom series intercom. The base station will provide full duplex audio

communication between the wireless headset and the intercom as well as PTT communication through the apparatus mobile radio.

Two (2) yellow, NFPA compliant, rubber coated steel headset hanger hooks shall be furnished in the front section of the cab to hold the driver and offer intercom headsets while not in use.

3.3.178. RADIO INTERFACE CABLE

One (1) radio interface cable for a Kenwood tk 7180 shall be provided and installed from the Firecom base unit to the area of where the mobile radio base station shall be mounted. The end of the cable that connects to the mobile radio shall be un-terminated and shall be the responsibility of the radio installer to provide and install the correct adapter to connect the cable to the mobile radio.

3.3.179. HEADSETS

Four (4) UH-52 single-plug push to talk under helmet intercom headsets shall be furnished for four (4) rear jump seat locations. The intercom headsets shall have adjustable volume, noise-canceling electric microphone, adjustable head strap, and a flex-style boom which rotates for left or right dress. The sets shall also have comfortable ComLeather ear seals.

Four (4) HM-10 plug in modules shall be furnished in the rear crew area of the cab at the jump seat locations to accommodate the intercom headsets.
Two (2) HM-10 plugs shall be installed in front cab one for driver and one for officer.
One (1) water tight plug shall be installed on pump panel.

3.3.180. REAR JUMPSEAT HEADSETS CONT'D

Four (4) yellow, NFPA compliant, rubber coated steel headset hanger hooks shall be furnished to hold the intercom headsets while not in use.

3.3.181. RADIO AND MDT

A Kenwood tk 7180 radio (supplied by Newport Fire) shall be installed. All wiring and antenna will be supplied and installed by bidder. Also a second radio antenna and wiring shall be supplied and installed by the bidder for future use.

An air radio (supplied by Newport Fire) shall be installed. All wiring and antenna will be supplied and installed by bidder.

Wiring and antenna for a mobile data terminal will be supplied and installed by bidder.

All radio and MDT placement will be at pre meeting

3.3.182. PUMP

- Hale Q-max or equal 1500 gpm pump shall be provided.

The pump must deliver the percentage of rated capacity at the pressure listed below:

- 100% of rated capacity at 150 P.S.I. net pump pressure
- 100% of rated capacity at 165 P.S.I. net pump pressure
- 70% of rated capacity at 200 P.S.I. net pump pressure
- 50% of rated capacity at 250 P.S.I. net pump pressure

3.3.183. PUMP ASSEMBLY

The pump shall be of a size and design to mount on the chassis rails of commercial and custom truck chassis, and have the capacity of 1500 gallons per minute (U.S. GPM), NFPA-1901 rated performance.

3.3.184. PUMP CONSTRUCTION

The entire pump shall be manufactured and tested at the pump manufacturer's factory.

The pump shall be driven by a drive line from the truck transmission. The engine shall provide sufficient horsepower and RPM to enable pump to meet and exceed its rated performance.

The entire pump, both suction and discharge passages, shall be hydrostatically tested to a pressure of 600 PSI (41.3 BAR). The pump shall be fully tested at the pump manufacturer's factory to the performance spots as outlined by the latest NFPA Standard 1901. Pump shall be free from objectionable pulsation and vibration.

The pump body and related parts shall be of fine grain alloy cast iron, with a minimum tensile strength of 30,000 PSI (2069 BAR). All moving parts in contact with water shall be of high quality bronze or stainless steel. Pumps utilizing castings made of lower tensile strength cast iron are not acceptable.

Pump body shall be vertically split, on a single plane, for easy removal of impeller assembly, including clearance rings.

3.3.185. PUMP SHAFT

Pump shaft to be rigidly supported by two bearings for minimum deflection. The bearings shall be heavy-duty, deep groove ball bearings in the gearbox and they shall be splash lubricated. The pump shaft shall be heat-treated, electric furnace, corrosion resistant, stainless steel. Pump shaft must be sealed with double lip oil seal to keep road dirt and water out of gearbox.

3.3.186. PUMP IMPELLER

Pump impeller shall be hard, fine grain bronze of the mixed flow design; accurately machined, hand-ground and individually balanced. The vanes of the impeller intake eye shall be hand-ground and polished to a sharp edge, and be of sufficient size and design to provide ample reserve capacity utilizing minimum horsepower.

Impeller clearance rings shall be bronze, easily renewable without replacing impellers or pump volute body.

3.3.187. MECHANICAL SHAFT SEAL

The midship pump shall be equipped with a high quality, spring loaded, self-adjusting mechanical seal capable of providing a positive seal to atmosphere under all pumping conditions. This positive seal to atmosphere must be achievable under vacuum conditions up to 26 Hg (draft) or positive suction pressures up to 250 PSI.

The mechanical seal assembly shall be 2 inches in diameter and consists of a carbon sealing ring, stainless steel coil spring, Viton rubber boot, and a tungsten carbide seat with a Teflon backup seal provided.

Only one (1) mechanical seal shall be required, located on the suction side of the pump and be designed to be compatible with a one piece pump shaft. A continuous cooling flow of water from the pump shall be directed through the seal chamber when the pump is in operation.

3.3.188. GEARBOX

The drive unit shall be completely assembled and tested at the pump manufacturer's factory.

The drive unit shall be of sufficient size to withstand up to 16,000 lbs. ft. of torque of the engine in both road and pump operating conditions. The drive unit shall be designed of ample capacity for lubrication reserve and to maintain the proper operating temperature.

The gearbox drive shafts shall be of heat treated chrome nickel steel and at least 2-3/4 inches in diameter on both the input and output drive shafts. They shall withstand the full torque of the engine in both road and pump operating conditions.

All gears, drive and pump shall be of the highest quality electric furnace chrome nickel steel. Bores shall be ground to size and teeth integrated, crown-shaved and hardened, to give an extremely accurate gear for long life, smooth, quiet running and higher load carrying capability. An accurately cut spur design shall be provided to eliminate all possible end thrust.

3.3.189. PUMP RATIO

The pump ratio shall be selected by the apparatus manufacturer to give maximum performance with the engine and transmission selected.

The manufacturer shall supply at time of delivery copies of the pump manufacturer's certification of hydrostatic testing, the engine manufacturer's current certified brake horsepower curve.

3.3.190. PUMP SHIFT CONTROL

The drive unit shall be equipped with a power shift. The shifting mechanism shall be a heat treated, hard anodized aluminum power cylinder with stainless steel shaft. An air operated in-cab control for rapid shift shall be provided that locks in road or pump, with a neutral position for use when manual override is required.

3.3.191. PUMP COOLING LINE

A minimum 3/8" cooling line shall be installed to cool the pump during prolonged pumping operations. The cooling line shall be controlled at the operator's position.

3.3.192. MAIN PUMP - PUMP SHIFT INDICATOR LIGHTS

For automatic transmissions, three (3) green warning lights shall be provided to indicate to the operator(s) when the pump has completed the shift for Road-to-Pump position. Two (2) green lights to be located in the truck driving compartment and one (1) green light on pump operator's panel adjacent to the throttle control. For manual transmissions, one (1) green warning light shall be provided for the driving compartment. All lights to have appropriate identification/instruction plates.

3.3.193. TRANSMISSION LOCK

The automatic transmission furnished in the chassis shall have a lock-up assembly which brings the transmission to direct drive and prevents the transmission from shifting gears while in the pumping mode.

3.3.194. BRAKING SYSTEM

A positive braking system shall be provided to prevent vehicle movement during pumping operations. The air brakes furnished must satisfy this requirement.

3.3.195. PUMP MANIFOLDS

Any custom made suction and discharge manifold shall be constructed from schedule 40 stainless steel and/or flexible tubing. The manifold shall be designed to provide maximum efficiency for the suction inlets and the discharges.

3.3.196. PRESSURE GOVERNOR

The apparatus shall be equipped with a Fire Research InControl 400 series pressure governor and monitoring display kit shall be installed. The kit shall include a control module, intake pressure sensor, discharge pressure sensor, and cables. Inputs for monitored information shall be from a J1939 databus or independent sensors. Outputs for engine control shall be on the J1939 databus or engine specific wiring.

3.3.197. INTAKE RELIEF VALVE

A relief valve shall be provided.

3.3.198. PUMP CERTIFICATION

The pump shall be third party performance tested to meet the requirements of NFPA-1901.

3.3.199. PRIMING SYSTEM

The priming pump shall be a 12-volt Oil-Less, positive displacement vane type primer, electrically driven. One priming control shall open the priming valve and start the priming motor. The primer shall be capable of priming without the use of primer oil. The primer shall be connected to the power source with a 300 amp fusible link.

The primer shall be activated by a manual valve located on the pump operator's panel. The valve shall activate the primer motor, which shall create a vacuum. Valve actuation may be accomplished while the main pump is operational, if necessary to assure complete prime.

3.3.200. MASTER DRAIN VALVE

A master drain valve shall be provided and controlled at the lower portion of the side pump panel. The valve shall be located in pump compartment lower than the main body and connected in such a manner as to allow complete water drainage of the pump body and all required accessories. Water shall be drained below the apparatus body and away from the pump operator.

3.3.201. INDIVIDUAL BLEEDERS AND DRAINS

All lines shall drain through the master drain valve or shall be equipped with individual drain valves, easily accessible and labeled. One (1) individual drain valve shall be furnished for each 1-1/2" or larger discharge port and each 2-1/2" gated auxiliary suction.

Drain/bleeder valves shall be located at the bottom of the side pump module panels.

All drains and bleeders shall discharge below the running boards.

Lift up drains are desired.

3.3.202. SYNFLEX SUCTION, DISCHARGE, PRESSURE AND CONTROL LINES

Small lines within the pump enclosure shall be constructed from Synflex hose. Uses include, but are not limited to such lines as priming control, gauge lines, drain lines, air control valves, pump shift, supplemental cooling, foam flush and air bleeder valves.

3.3.203. PUMP MODULE

The pump module shall be a self-supported structure mounted independently from the body and chassis cab. The design must allow normal frame deflection without imposing stress on the pump module structure or side running boards. The pump module shall be securely mounted to the chassis frame rails.

The pump module shall be a welded frame work utilizing structural components properly braced to withstand the rigors of chassis frame flex.

3.3.204. DUNNAGE AREA

A dunnage area shall be provided above the pump enclosure for equipment mounting and storage. This area shall be furnished with a removable floor and shall be enclosed on the sides.

3.3.205. SUCTION INLETS

Two (2) 6" N.S.T. suction inlets shall be provided, one on the driver side and one on the officer side pump panel. A removable strainer shall be installed on each inlet.

3.3.206. INTAKE BUTTERFLY VALVE - ELECTRIC OPERATED - DRIVER SIDE

The fire pump shall be fitted with a Hale Master Intake Valve (MIV), on the driver side main suction inlet. The valve shall be mounted between the suction tube extension and the suction tube, and shall be recessed behind the operator's panel. The valve body and all related components that are in contact with water shall be manufactured of fine grained, corrosion resistant bronze. The valve shall have a bore of 6.40". The valve shall incorporate a pressure relief valve, set at the pump manufacturer’s facility to a rating of 125 PSI. The pressure relief valve shall provide protection for the suction hose even with the valve in the closed position. The valve shall incorporate NFPA-1901 compliant, large diameter hose air bleed valve, controlled at the operator's panel.

The valve shall be operated by a twelve (12) volt DC motor, as standard. It shall also incorporate a knob control manual override, mounted at the suction inlet. The electric control shall incorporate a placard with status lights to indicate whether the valve is in the closed, open or throttled position. The valve shall not be able to move from fully open to fully closed in under three (3) seconds, in compliance with NFPA-1901.

3.3.207. INTAKE BUTTERFLY VALVE - ELECTRIC OPERATED - OFFICER SIDE

The fire pump shall be fitted with a Hale Master Intake Valve (MIV), on the officer side main suction inlet. The valve shall be mounted between the suction tube extension and the suction tube, and shall be recessed behind the operator's panel. The valve body and all related components that are in contact with water shall be manufactured of fine grained, corrosion resistant bronze. The valve shall have a bore of 6.40". The valve shall incorporate a pressure relief valve, set at the pump manufacturer’s facility to a rating of 125 PSI. The pressure relief valve shall provide protection for the suction hose even with the valve in the closed position. The valve shall incorporate NFPA-1901 compliant, large diameter hose air bleed valve, controlled at the operator's panel.

The valve shall be operated by a twelve (12) volt DC motor, as standard. It shall also incorporate a knob control manual override, mounted at the suction inlet. The electric control shall incorporate a placard with status lights to indicate whether the valve is in the closed, open or throttled position. The valve shall not be able to move from fully open to fully closed in under three (3) seconds, in compliance with NFPA-1901.

3.3.208. PUMP SUCTION ENDS

The main pump suction inlets shall be furnished with a short suction end, terminating with only the suction threads protruding through the side panel to minimize the distance an exterior appliance protrudes beyond the pump panel.

A 30 degree, 5” Storz with cap shall be installed on all suction ends.

3.3.209. REAR SUCTION

A 4" N.S.T. rear suction inlet shall be provided at the rear of the vehicle, plumbed from the pump.

The rear suction inlet shall terminate on the rear body panel on the driver side of the body.

The rear suction pipe shall be equipped with a chrome 4" NSTM thread adapter.

The rear inlet shall be plumbed utilizing 4" schedule 10 stainless steel piping, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to the rear of the vehicle.

A minimum of two (2) grooved pipe couplings shall be furnished in this assembly to allow for flex and serviceability.

The rear suction inlet shall be gated with a 4" in-line, full flow ball valve, located in the pump compartment.

An inlet relief valve shall be provided as part of the rear suction plumbing, situated outboard of the rear suction gate valve.

The rear suction ball valve shall be equipped with a Valve Controller. The electric controls shall be of true position feedback design, requiring no clutches in the motor or current limiting. The unit shall be completely sealed with momentary open, close. The unit shall provide position indication through a full color backlit LCD display.

One (1) 30 degree 5” storz with cap shall be installed on rear suction.

3.3.210. AUXILIARY SIDE SUCTIONS

Two (2) 2-1/2" auxiliary suctions shall be provided; located one at the driver side pump panel and one on the officer side, to the rear of the main inlet. The 2-1/2" auxiliary suction shall terminate with a removable strainer, chrome plated 2-1/2" NST female swivel with a chrome plated plug and retaining chain.

A 1/4 turn swing control handle shall be provide on the auxiliary suction valve

All side gated inlet valves shall be recess mounted behind the side pump panels or body panels.

3.3.211. TANK TO PUMP

One (1) tank to pump line with a flow capability of not less than 500 GPM shall be provided. This line shall be plumbed directly into the rear of the pump suction manifold for maximum efficiency.

A check valve shall be provided to prevent accidental pressurization of the water tank through the pump connection. Connection from the valve to the tank shall be made by using a non-collapsible flexible rubber hose.

A valve shall be provided between the pump suction manifold and the water tank. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

3.3.212. TANK FILL

One (1) 2" gated full flow pump to tank refill line controlled at the pump panel shall be provided. A deflector shield inside the tank shall be furnished. Tank fill plumbing shall utilize 2" high pressure hose for tank connection to accommodate flexing between components.

A valve shall be provided between the pump discharge manifold and the water tank. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

A push/pull control handle shall be located on the operator's panel with function plate.

3.3.213. DRIVER'S SIDE MAIN DISCHARGE #1

A discharge shall be provided and located at the driver's side pump panel. The driver's side discharges # 1 shall terminate with NST threads, through the left panel above the main pump intake.

The main pump discharge shall be plumbed directly from the pump discharge manifold utilizing direct connect discharge valve flanges.

A valve shall be provided for the driver's side #1 discharge. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The discharge valve shall be equipped with integral 2 1/2" NST, 30 degree, chrome-plated elbow.

A 2 1/2" NST chrome plated pressure vented cap shall be installed on driver's side #1 discharge.

The driver's side # 1 discharge valve shall be controlled by a push/pull handle located on the operator's panel.

The driver's side # 1 discharge shall be equipped with a 2 ½" diameter pressure gauge. A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauge shall have black graphics on a white background.

3.3.214. DRIVER'S SIDE MAIN DISCHARGE #2

A discharge shall be provided and located at the driver's side pump panel. The driver's side discharges # 2 shall terminate with NST threads, through the left panel above the main pump intake.

The main pump discharge shall be plumbed directly from the pump discharge manifold utilizing direct connect discharge valve flanges.

A valve shall be provided for the driver's side #2 discharge. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seat.

The discharge valve shall be equipped with integral 2 1/2" NST, 30 degree, chrome-plated elbow.

A 2 1/2" NST chrome plated pressure vented cap shall be installed on driver's side # 2 discharge.

The driver's side # 2 discharge valve shall be controlled by a push/pull handle located on the operator's panel.

The driver's side # 2 discharge shall be equipped with a 2 ½" diameter pressure gauge. A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauge shall have black graphics on a white background.

3.3.215. OFFICER'S SIDE MAIN DISCHARGE #1

A discharge shall be provided and located at the officer's side pump panel. The officer's side discharges #1 shall terminate with NST threads, through the officer's side panel above the main pump intake.

The main pump discharge shall be plumbed directly from the pump discharge manifold utilizing direct connect discharge valve flanges.

A valve shall be provided for the officer's side #1 discharge. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The discharge valve shall be equipped with integral 2 1/2" NST, 30 degree, chrome-plated elbow.

A 2 1/2" NST chrome plated pressure vented cap shall be installed on officer's side # 1 discharge.

The officer's side #1 discharge valve shall be controlled by a push/pull handle located on the operator's panel.

The officer's side #1 discharge shall be equipped with a 2 ½" diameter pressure gauge.

3.3.216. OFFICER'S SIDE MAIN DISCHARGE #2

A discharge shall be provided and located at the officer's side pump panel. The officer's side discharges #2 shall terminate with NST threads, through the officer's side panel above the main pump intake.

The main pump discharge shall be plumbed directly from the pump discharge manifold utilizing direct connect discharge valve flanges.

A valve shall be provided for the officer's side #2 discharge. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The discharge valve shall be equipped with a straight 3 1/2" NST adapter that shall be equipped with a 3 1/2" NST, 30-degree, chrome-plated elbow.

A 3 1/2" NST to 5" storz with cap.

The officer's side #2 discharge valve shall be controlled by a push/pull handle located on the operator's panel.

The officer's side #2 discharge shall be equipped with a 2 ½" diameter pressure gauge. A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauge shall have black graphics on a white background.

3.3.217. REAR DISCHARGE

A 2 1/2" NST rear discharge shall be provided at the rear of the vehicle, plumbed from the pump.

The rear discharge shall terminate on the rear body panel, on the officer side of the body.

The rear discharge pipe shall be equipped with a chrome 2 1/2" NSTM thread adapter.

The rear discharge shall be plumbed utilizing 2 1/2" schedule 40 stainless steel piping, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to the rear of the vehicle.

A minimum of one (1) grooved pipe coupling shall be furnished in this assembly to allow for flex and serviceability.

A valve shall be provided for the rear discharge. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The rear discharge valve shall be controlled by a push/pull handle located on the operator's panel.

One (1) 2 1/2" NST chrome plated pressure vented cap shall be installed at the rear discharge.

The rear discharge shall be equipped with a 2 ½" diameter pressure gauge. A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauge shall have black graphics on a white background.

3.3.218. DECK GUN DISCHARGE

A deck gun discharge shall be plumbed from the pump to an area on top of the vehicle. The deck gun piping shall be firmly supported and braced.

The deck gun discharge shall be located in the dunnage area above the pump module on the officer's side of the vehicle.

The deck gun discharge pipe shall terminate with a 4-bolt flange.

The deck gun piping shall be designed so the overall height of the deck gun in the mounted/stowed position does not exceed the tallest point on the cab/body.

The deck gun discharge shall be plumbed utilizing 3" schedule 40 stainless steel piping, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to the deck gun location.

A minimum of one (1) grooved pipe coupling shall be furnished in this assembly to allow for flex and serviceability.

A valve shall be provided for the deck gun discharge. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The deck gun discharge shall be gated with an inline valve. The valve shall be controlled at the pump operator's panel by a push/pull handle located on the operator's panel.

The deck gun discharge also shall be gated with an inline valve at the deck gun.

The deck gun discharge shall be equipped with a 2 ½" diameter pressure gauge. A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauge shall have black graphics on a white background.

3.3.219. MANUAL DECK GUN

A deck gun package which shall include a ground base with 1-5" Storz inlets, the Cross Fire monitor top, one (1) set of quad stack tips, one (1) Master Stream 1000 GPM. automatic nozzle, stream straightener.

3.3.220. FRONT DISCHARGE

A 1 1/2" front discharge shall be plumbed to the front bumper of the vehicle.

The front discharge shall terminate on the top center of the front bumper extension gravel shield next to the hose well, with a 90 degree swivel adapter with 1-½ NST outlet

The front discharge shall be plumbed utilizing 2" schedule 40 stainless steel piping and/or flexible hose, 45 degree elbows and a limited number of 90 degree sweep elbows in an assembly from the pump to the front of the vehicle.

A minimum of one (1) grooved pipe coupling shall be furnished in this assembly to allow for flex and serviceability. Automatic discharge drains shall be provided at all low points in the plumbing.

A valve shall be provided for the front discharge. The valve shall have an all brass body with flow optimizing stainless steel ball and dual polymer seats.

The front discharge valve shall be controlled by a push/pull handle located on the operator's panel.

A 1 1/2" NST chrome plated pressure vented cap shall be installed on the front #1 discharge.

The front #1 discharge shall be equipped with a 2 ½" diameter pressure gauge. A polished chrome-plated stainless steel bezel shall be provided to prevent corrosion and protect the lens and gauge case. The gauge shall have black graphics on a white background.

3.3.221 TRIPLE CROSSLAY HOSEBED

The crosslays shall be arranged on top of the transverse compartment, with the #1 crosslay toward the front of the transverse compartment and the #2 crosslay in the center and #3 immediately behind #2.

The #1, #2 and #3 crosslays shall each be equipped with a 1-1/2" male NST outlet. The crosslays shall be plumbed with 2" Schedule 40 stainless steel high pressure pipe. A 2" quarter turn ball valve shall be used to control water flow. The outlet shall be equipped with a 2" polished stainless steel 90 degree swivel with 1-1/2" male NST thread located in the hosebed.

These crosslay beds shall be capable of carrying a minimum of two hundred feet (200') of 1-3/4" double jacketed hose in each. Each bed shall be single stack with room for nozzle.

Each crosslay valve control shall be mounted on the operator's panel.

A drain valve shall be installed for each crosslay.

3.3.222. CROSSLAY DIVIDERS

A crosslay divider shall be provided between each crosslay. There shall be a hand hole on each side of the divider to assist the firefighter. The dividers shall be adjustable.

3.3.223. ENCLOSURE HOSEBED HOSE RETENTION

A polished aluminum tread plate cross lay cover shall be provided with a full length stainless steel hinge at the front of the cover. Stops shall be provided to protect cab or other body components.
Vinyl flaps shall be provided at each side of the transverse cross lay compartment secured to the tread plate cross lay cover by quarter turn fasteners, and equipped with a strap to each end.

3.3.224. FOAM PIPING

All foam concentrate plumbing from the tank or auxiliary foam inlet to the foam system components shall be schedule 40 stainless steel.

The foam system piping shall incorporate a check valve to prevent water from entering the foam tank; the discharge piping shall also include a check valve to prevent foam solution from back feeding into the discharge side of the pump. Individual discharge piping shall be as specified for each discharge.

The complete foam system shall be tested in accordance with NFPA-1901.

3.3.225. FOAMPRO FOAM INJECTION SYSTEM

A FoamPro model 2001, electronic, fully automatic, variable speed, direct injection, discharge side foam proportioning system shall be installed in the pumping system. The system shall be capable of handling Class "A" foam concentrates. The foam proportioning operation shall be based on direct measurement of water flows, and remain consistent within the specified flows and pressures.

System must be capable of delivering accuracy to within 3% of calibrated settings over the advertised operation range when installed according to factory standards. The system shall be equipped with a digital electronic control display suitable for installation on the pump panel.

Incorporated within the control display shall be a microprocessor that receives input from the system flowmeter, while also monitoring foam concentrate pump output, comparing values to ensure that the operator preset proportional amount of foam concentrate is injected into the discharge side of the fire pump.

A paddlewheel-type flowmeter shall be installed in the discharge or manifold system specified to be “foam capable”.

A full flow check valve shall be provided to prevent foam contamination of fire pump and water tank or water contamination of foam tank.

A 12 or 24-volt electric motor drive positive displacement foam concentrate pump, rated up to 2.5 GPM (9.5 L/min) @ 150 psi with operating pressures up to 400 psi (27.6 BAR), shall be installed in a suitable, accessible location. The system shall draw a maximum of 40 amps @ 12 VDC or 21 amps @ 24 VDC. A pump motor electronic driver (mounted to the base of the pump) shall receive signals from the computer control display and power the 1/2 hp (0.40 Kw) electric motor directly coupled to the concentrate pump in a variable speed duty cycle to ensure that the correct proportion of concentrate preset by the pump operator is injected into the water stream.

The digital computer control display located on the pump operator's panel shall enable the pump operator to perform the following control and operation functions for the foam proportioning system:

- Provide push-button control of foam proportioning rates from 0.1% to 9.9%, in 0.1% increments
- Show current flow-per-minute of water
- Show total volume of water discharged during and after foam operations are completed
- Show total amount of foam concentrate consumed
- Simulate flow rates for manual operation
- Perform setup and diagnostic functions for the computer control microprocessor
- Flash a “low concentrate” warning when the foam concentrate tank(s) runs low
- Flash a “no concentrate” warning and shut the foam concentrate pump off, preventing damage to the pump, should the foam tank(s) empty

The digital computer control display shall interface with the options listed; provide dual foam calibration, and display separate totals for each foam concentrate used. If two foam tanks are required and piped to the foam concentrate pump, either an electric dual tank valve or the manual dual tank valve shall be provided.

Components of the complete proportioning system shall include:

- Operator control and display
- Paddlewheel flowmeter
- Pump and electric motor/motor driver

- Wiring harnesses
- Low-level tank switch (Switches)
- Electronic dual tank valve or manual dual tank valve (if more than one tank)
- Foam injection check valve
- Main waterway check valve

Accurate concentration proportioning can be achieved, based on the following water flows:

- 85 GPM water 3.0% concentration
- 260 GPM water 1.0% concentration
- 520 GPM water 0.5% concentration
- 1300 GPM water 0.2% concentration

Note: Multiple discharges plumbed to this system may affect performance if the flow rates are exceeded by any one discharge or the totality of multiple discharges at one time!

The discharge piping shall be equipped with a properly sized flowmeter sensor, based on the systems capabilities.

The foam system shall be plumbed to the following discharges through the discharge piping or manifold system:

- Crosslay #1 discharge.
- Crosslay #2 discharge.
- Crosslay #3 discharge.
- Front discharge.
- rear discharge.

The foam proportioning system shall be supplied from the foam concentrate storage tanks. The tanks shall be constructed of materials compatible with foam concentrates being used in the system. Tank capacity, venting, fill opening and foam outlet plumbing connections shall be in accordance with NFPA requirements. Foam tank lid shall be sealed and latched in accordance with NFPA standards. If required a provision shall be made for installation of low tank level sensors and routing of the wiring for the sensors.

The foam tank shall be 30 gals.

3.3.226. PUMP PANEL - SIDE MOUNT

The pump operator's control panel shall be located on the driver side of the apparatus. The pump enclosure side panels shall be completely removable and designed for easy access and servicing.

3.3.227. PUMP PANEL MATERIAL.

The left side operator's panel, gauge panel, right side pump panel and right side access door shall be fabricated from 12-gauge 304L stainless steel with a #4, (150/180 grit), standard brushed finish.

3.3.228. HINGED GAUGE PANEL

A full width, vertically hinged gauge access panel shall be provided at the operator's position. Positive locks shall be provided along with chain holders to prevent the front of the gauge panel from coming in contact with other panels when open.

3.3.229. VERTICALLY HINGED, SPLIT PUMP PANEL OFFICER SIDE

The officer's side pump panel shall be split, vertically hinged, to provide complete access to the pump and plumbing on the officer side of the pump enclosure. The panels shall be equipped with stainless steel hinges and secured with push type locks to hold the panels closed. The drains located on the officer's side panel shall be fastened to the lower panel, which shall be stationary.

3.3.230. PANEL FASTENERS

Stainless steel machine screws and lock washers shall be used to hold these panels in position. The panels shall be easily removable to provide complete access to the pump for major service.

3.3.231. CAPS AND ADAPTERS SAFETY TETHER

All applicable discharge and suction caps, plugs and adapters shall be equipped with chrome plated ball chain and secured to the vehicle.

3.3.232. COLOR CODED IDENTIFICATION TAGS

Color coded identification tags shall be provided for all gauges, controls, connections, switches, inlets and outlets.

3.3.233. PUMP OPERATOR'S PANEL LIGHT SHIELD AND STEP

Both sides of the pump operator’s panel shall be equipped with a light shield that shall be full width of the control panel, and shall be positioned to cover the lights and prevent glare.

The light shield shall be equipped with the following: Super bright led strip light.

Lights shall illuminate with engagement of the parking brake.

3.3.234. PUMP OPERATOR'S PANEL

Particular attention is to be given to functional arrangement of all controls. The pump operator's panel shall accommodate the following:

- Hinged gauge panel
- Water tank fill valve
- Auxiliary suction valve control
- All discharge valve controls
- Auxiliary engine cooler controls
- Water tank suction control valve
- Pump primer valve
- Engine throttle control
- Master compound vacuum gauge
- Master pressure gauge
- Individual discharge gauges
- Pump shift engaged indicator light
- Water tank water level indicator
- Engine tachometer
- Engine oil pressure gauge with audible alarm
- Engine water temperature gauge with audible alarm
- Low voltage light and audible alarm
- Pump panel light switch
- Speed counter (Underwriters)
- Pump performance plate (Underwriters)

- Pump serial No. plate
- Master pump drain valve
- Individual drains
- Voltmeter
- Air inlet/outlet at lower driver side panel
- 3/8" Pump cooler (Bypass Line)
- Pressure governor control

3.3.235. PUMP TEST PORTS

The pump panel shall be equipped with Vacuum & Pressure test plugs to allow for test equipment to monitor pump pressure and vacuum levels. Chrome plugs and labels shall be provided for the test ports.

3.3.236. MASTER GAUGES

One (1) 4" diameter pressure gauge (labeled: "PRESSURE") and one (1) 4" diameter compound vacuum gauge (labeled: "INTAKE") shall be provided. The master gauges shall be liquid filled. The gauge faces shall be white with black numerals.

All applicable pressure gauges shall have a range of 0 - 400 P.S.I., and the compound gauge shall have a range of -30" - 0 - 400 P.S.I.

3.3.237. ENGINE COOLER

An auxiliary cooler or heat exchanger shall be installed in the engine compartment between the engine and the chassis radiator. The cooler shall permit the use of water from the pump for cooling system. The cooling shall be done without mixing engine and pump water.

3.3.238. TANK LEVEL GAUGE

A gauge that shows the actual volume of water in the tank shall be provided on the pump operator's panel. The gauge is designed for both ease of operation and installation. The gauge utilizes ultra-bright LEDs for sunlight readability and also uses specially designed wide-viewing lens for 180° of clear viewing. Fire Research and Class 1 gauges are acceptable.

The gauge shall use a pressure transducer installed near the bottom of the water tank to determine the correct volume in the tank.

3.3.239. WATER TANK SIGHT LEVEL GAUGE

A water tank sight level gauge shall be provided to display actual water tank levels by viewing the water level through a shielded clear plastic tube located towards the rear of the left side pump panel. Inline shut off valves shall be incorporated into the gauge feed lines to allow cleaning and tube replacement. The tube shall have a guard.

3.3.240. FOAM TANK LEVEL GAUGE - FOAM TANK "A"

A gauge that shows the actual volume of foam in the tank shall be provided on the pump operator's panel. Fire Research or Class 1 gauge is acceptable.

The gauge shall use a pressure transducer installed near the bottom of the foam tank to determine the correct volume in the tank.

3.3.241. WATER TANK

The water tank shall have a minimum capacity of 750 gallons, constructed from Poly material.

3.3.242. FOAM TANK "A"

In addition to the water capacity of the tank, a 30 gallon foam storage tank shall be provided. The foam tank shall have a latched fill tower, properly labeled as the foam fill point. A valved drain shall be provided. Tank shall be poly type.

3.3.243. TANK CONSTRUCTION

The Poly water tank shall be constructed of polypropylene material, and shall be built in compliance with NFPA-1901 requirements. Acceptable brands are UPF, APR, and Pro-Poly.

3.3.244. CAPACITY CERTIFICATION

All tanks shall be tested and certified as to capacity on a calibrated and certified tilting scale. Each tank shall be weighed empty and full to provide precise fluid capacity. Each Poly-Tank is to be delivered with a Certificate of Capacity delineating the weight empty and full and the resultant capacity based on weight.

3.3.245. OVERFLOW AND VENT PIPE

The fill tower shall be fitted with an integral 4" I.D. schedule 40 P.V.C. combination overflow/vent pipe running from the fill tower through the tank to a 4" coupling flush mounted into the bottom of the tank to allow water to overflow behind the chassis rear axle.

3.3.246. TANK SUMP

The tank sump shall be a minimum of 10" wide x 10" long x 3" deep. An anti-swirl plate shall be mounted inside the sump, approximately 1" above the bottom of the sump.

3.3.247. TANK SUMP CONNECTION

The front bulkhead of the water tank shall be fitted with one (1) tank sump.

A 3" drain plug shall be provided.

3.3.248. OUTLETS

There shall be two (2) standard tank outlets; one for tank-to-pump suction line which shall be a minimum of 4" coupling and one for a tank fill line which shall be a minimum of a 2" N.P.T. coupling. All tank fill couplings shall be backed with flow deflectors to break up the stream of water entering the tank.

3.3.249. WATER TANK MOUNTING

The tank shall rest on cross members utilizing a design that is approved by the water tank manufacturer. The tank is designed on the free-floating suspension principle and shall not require the use of hold downs. The tank shall be completely removable without disturbing or dismantling the apparatus body structure. The body or hose bed cross braces shall act as water tank retainers.

3.3.250. LADDER STORAGE

The ground ladders shall be stored within a sleeve in the water tank.

A hinged rear access door shall be provided and tied into the "Do Not Move Apparatus" warning system.

3.3.251. TRANSVERSE STORAGE COMPARTMENT

An enclosed, full cab width x 24" front to back x 48” height transverse compartment shall be furnished at the back of the cab, ahead of the fire pump compartment. The compartment shall be furnished with a single full compartment height door opening on each side. The floor of the transverse compartment shall extend from the running board level in to the chassis frame, then up and over the frame rails, providing a full width opening above the frame rail level.

One (1) adjustable, full width, aluminum shelf shall be installed and shall have a flange 1-1/2" deep and a minimum material thickness of .190". The shelf shall be fully adjustable in height and held in place by eight (8) extruded uprights.

The surface of the aluminum shelf shall be covered with black Dri-Dek mat for improved ventilation that shall also provide a non-slip surface.

The transverse compartment shall be provided with roll up doors.

The transverse compartment door latches shall be non-locking stainless steel lift bars and shall be provided with a magnetic door ajar switch system.

3.3.252. APPARATUS BODY DESIGN CONSTRUCTION

The body side and compartment assemblies shall be designed and assembled to provide maximum strength and durability under all operating conditions.

Special attention shall be taken to minimize corrosion on all fabricated parts and structural members of the body. All bolt-on components shall be provided with a dissimilar metals isolation barrier to prevent electric corrosion. The body design shall also incorporate removable panels to access spring hangers, rear body mounts and fuel tank sending units.

The body shall be completely isolated from the cab and pump module structure.

3.3.253. COMPARTMENT TOPS

The top of the welded in compartment ceiling shall be overlaid with aluminum treadplate or stainless steel.

3.3.254. COMPARTMENT DRIP MOLDING

Compartment doors shall have an integral drip molding built into the door header to provide protection against water runoff.

3.3.255. REAR BODY PANEL

The rear body panel shall extend the full width between the body side compartments. This panel shall be full height from the rear step to the hose bed floor. No part of the rear panel shall be attached to the booster tank.

3.3.256. BODY AND COMPARTMENT FABRICATION

All compartment panels and body side sheets shall be fabricated entirely of 3/16" aluminum or stainless steel. Bidders are to specify fabrication techniques with their bid.

The body shall be bolted to the sides of the chassis frame at four (4) points. Two (2) mounting points shall utilize a spring mount to help isolate the body from chassis deflection.

This design shall provide storage capacity in each side compartment for a minimum of 500 lbs of equipment, and a minimum of 1000 lbs of equipment in the rear step compartment.

3.3.257. FIRE BODY WIDTH

The fire body shall be approximately 100" wide to provide the maximum amount of usable hose bed and compartment space.

3.3.258. BODY FENDER

Storage for at least 6 scba bottles shall be located in the fender area by the rear wheels

3.3.259. DRIVER SIDE BODY COMPARTMENTATION

One full height/full depth compartment shall be provided forward of the rear wheels. With three (3) adjustable shelves.

One full depth high side compartment shall be provided above the rear wheels.

One full height/full depth compartment shall be provided behind the rear wheels.

Two (2) full height vertical pull out tool boards shall be installed in the driver side rear (L3) body compartment. Each board shall be equipped with heavy duty slides and a gas shock to hold the board in both the in and out positions. The tool board shall be made from .25" aluminum and be fully adjustable across the width of the compartment.

The driver side compartments shall provide as much storage space as possible.

3.3.260. OFFICER SIDE BODY COMPARTMENTATION

One full height/full depth compartment shall be provided forward of the rear wheels. The compartment shall be locking with key. The compartment shall have heater to maintain dryness for medical supply with three (3) adjustable shelves.

One full depth high side compartment shall be provided above the rear wheels. With one adjustable shelf.

One full height/full depth compartment shall be provided behind the rear wheels. With two (2) adjustable shelves.

The officer side compartments shall provide as much storage space as possible.

3.3.261. REAR STEP COMPARTMENT

An equipment storage compartment shall be provided on the rear of the body at the rear step area
.
The rear step compartment shall provide as much storage space as possible.

The rear step compartment shall have full side panels which shall isolate this storage area from the side body compartments.

The rear step compartment shall be equipped with a rollup style door.

3.3.262. EXTENDED REAR STEP - SQUARE CORNERS

The extended rear step shall be not less than 16" deep, extended beyond the body compartments. The step shall be 100" wide, with square corners. The step shall be fabricated from polished aluminum treadplate, and shall be rigidly reinforced.

The rear edge of the step shall be designed to accommodate the rear clearance lights, recessed for protection in the step reinforcement channel. The step shall be bolted into place with a minimum 1/2" clearance gap between the step and rear body panel.

3.3.263. HOSE BED

The hose bed shall be located directly above the booster tank and shall be free from all sharp objects such as bolts, nuts, etc., to avoid damage to fire hose.

The inner hosebed side walls shall be brushed panels, which shall prevent damage to painted surfaces when deploying hose.

3.3.264. HOSE BED CAPACITY

The hose bed shall be designed with enough storage capacity to carry the following hose load:

- 1000 Feet of 5" supply hose
- 1000' Feet of 2-1/2" supply hose
- 200 Feet of 2-1/2" blitz line

3.3.265. HOSE BED FLOORING

Flooring is to be constructed from extruded aluminum and be properly spaced for ventilation. The flooring shall be smooth and free from sharp edges to avoid hose damage. The hose bed floor shall be removable to provide access to inner body framework.

3.3.266. HOSE BED PARTITION

Three (3) fully adjustable, 1/4" aluminum hose bed partition with hand holes shall be provided. Partition shall be easily adjustable by means of channels located at the front and rear of the hose bed. Partition shall be removable for access to the booster tank.

3.3.267. HOSE BED COVER, ALUMINUM TREAD PLATE

An aluminum tread plate hose bed cover shall be mounted to the side body flanges utilizing a full length stainless steel hinge on each side. The cover shall be constructed of aluminum tread plate with aluminum extrusion frame. The cover shall be supported by a fixed center partition.

Handles shall be provided at the rear for lifting. Gas springs and cables shall be provided at the front to hold open the doors.

Switches shall be provided on each side cover, which shall be tied into the "Do Not Move Apparatus When Light Is On" warning light in the cab.

3.3.268. VINYL FLAPS

Two (2) vinyl flaps at the rear of the tread plate hose bed cover. They shall be secured to the hose bed cover with quarter turn fasteners and to the rear body with bungee cords.

The material shall be red in color.

3.3.269. ROLL-UP DOORS

Roll-up doors shall be provided on all compartments. The roll-up doors shall be constructed from aluminum extruded slats which shall have a flexible seal between each slat for proper sealing of the door.

The door shall be equipped with a lift bar style latch mechanism which shall latch at the bottom of the door mounting extrusion.

All body compartments shall be equipped with roll-up doors.

Acceptable brands of roll up doors are Robinson and Gortite.

3.3.270. SWEEP-OUT COMPARTMENT FLOORS

Compartment floors shall be welded to the compartment walls and have a sweep out design for easy cleaning.

3.3.271. COMPARTMENT LOUVERS

Ventilation between compartments to atmosphere shall be provided and located to avoid water entry into compartments.

3.3.272. ACCESS PANELS

Removable access panels shall be provided (if applicable) to access fuel tank sender, electrical junction compartment and rear body mounts.

Protective panels shall be located in the rear compartments providing access to the lights and associated wiring. The covers shall also serve as protective covers to prevent inadvertent damage to lights or wiring from tools or equipment located in the compartment.

3.3.273. BODY RUB RAILS

Sacrificial offset rub rails shall be mounted at the base of the body.

3.3.274. RUNNING BOARD STEPS

The driver and officer running board steps shall be fabricated of polished aluminum tread plate. The outside edge on each step shall be fabricated with a double break, return flange. The steps shall be rigidly reinforced with a heavy duty support structure. The running boards shall not form any part of the compartment design, and shall be bolted into place with a minimum 1/2" clearance gap between any panel to facilitate water runoff.

3.3.275. GRAB RAILS

All hand rails shall be 1-1/4" outer diameter, knurled bright anodized aluminum extrusion, designed to meet NFPA 1901 requirements. Molded gaskets shall be installed between the handrail stanchion castings and body surfaces to prevent electrolytic reaction between dissimilar metals and to protect paint.

3.3.276. GRAB RAIL LOCATIONS

Grab rails shall be provided at the following specified locations. Additional grab rails shall be provided adjacent to any additional steps specified to comply with NFPA 1901.

Two (2) vertical rails shall be mounted on the rear edge of the beavertails, one (1) each side.

One (1) horizontal, full width handrail shall be installed on the rear, below the level of the hose bed.

3.3.277. STEPS

Large steps with a textured chrome plate or stainless finish shall be provided on the body rear to provide NFPA compliant access (maximum 18" height between steps) to an upper horizontal walking surface. At a minimum, steps shall be provided as follows:

- Three each side at the front face of the side body compartments
- Two each side at rear of body.
- One full width step at rear of body.

3.3.278. SAFETY SIGN(S) AT REAR STEP AND CROSS WALKWAY(S)

Safety signs shall be located on the vehicle at the rear step, and at any cross walkway, to warn personnel that riding in or on these areas while the vehicle is in motion is prohibited.

3.3.279. REAR WHEEL WELL LINERS

Fully removable, one piece, bolt-in, stainless steel rear wheel well liner and fenderette will be provided. The wheel well liners will be natural metal finish and will protect the front and rear compartments and main body supports from damage.

3.3.280. REAR MUD FLAPS

Heavy duty mud flaps shall be provided behind the rear wheels.

3.3.281. REAR AND FRONT TOW EYES

Two (2) painted tow eyes shall be furnished on the rear of the vehicle, and two (2) tow eyes on the front of the vehicle. The tow eyes shall be made from plate steel and shall be bolted directly to the chassis frame rails with grade 8 bolts and shall extend below the body. The tow eyes shall be smooth and free from sharp edges, and have a minimum eyelet hole of 2-1/2". The tow eyes shall be painted.

3.3.282. SLIDE OUT FLOOR MOUNT SHELVING

Slide out floor mount compartment shelving shall be constructed of 3/16" brush finish aluminum with a 2" upward bend at front and rear, and side supports attached to 250-lb. rated slides. Slide out floor mount shelving shall have gas shocks to hold the tray in and out.

Slide out floor mount shelving shall be provided as follows:

One (1) in the driver side front compartment
One (1) in the officer side front compartment
One (1) in the driver side rear compartment
One (1) in the officer side rear compartment
One (1) in the rear step compartment

3.3.283. BACKBOARD STORAGE

A storage module shall be provided for two (2) backboards. The location shall be in the through-the-tank ladder storage.

3.3.284. 120/240 VOLT ELECTRICAL SYSTEM TESTING

All line voltage wiring and permanently connected devices and equipment shall be subjected to a dielectric voltage withstand test of 900 volts for one minute. The test shall be conducted between live

parts and the neutral conductor and between live parts and the vehicle frame with any switches in the circuits closed. The test shall be conducted after all bodywork has been completed. The dielectric tester shall have a minimum 500 VA transformer with a sinusoidal output voltage that can be verified.

Electrical polarity verification shall be made of all permanently wired equipment and receptacles to determine that connections have been properly made.

3.3.285. OPERATIONAL TESTING

The apparatus manufacturer shall perform the following operation test and shall certify that the power source and any devices that are attached to the line voltage electrical system are properly connected and in working order.

The generator shall be started from a cold start condition and the line voltage electrical system shall be loaded to 100 percent of the nameplate voltage rating.

The following items shall be monitored and documented every 15 minutes:

- The cranking time until the generator starts and runs.
- The voltage, frequency, and amperes at continuous full rated load.
- The generator oil pressure, water temperature, transmission temperature, hydraulic temperature, and the battery rate charge, as applicable.
- The ambient temperature and altitude.

The generator shall operate at 100 percent of its nameplate wattage for a minimum of two (2) hours.

3.3.286. GENERATOR

The generator shall be one (1) Hydraulic Driven Generator rated at 10,000 watts, 84/42 amps, 120/240VAC, 60Hz, 1-phase.
The generator shall be capable of being used while vehicle is either stationary or in motion.
The hydraulic pump shall be driven by a chassis transmission mounted power take off (PTO). The PTO control shall be a “hot shift” type.

3.3.287. 120/240 VOLT WIRING

The wiring from the generator to the breaker box shall be hard wired, and in compliance with NFPA-1901 requirements.

The generator shall be equipped with an appropriately sized 220V plug that shall attach to the breaker box to supply electrical power to the circuits.

A 12V plug assembly shall be provided for a remote start/stop circuit if the generator is equipped with such means.

3.3.288. GENERATOR LOCATION

The generator shall be permanently mounted in the dunnage area of the pump compartment.

3.3.289. 120/240 VOLT LOAD CENTER

The generator output line conductors shall be wired from the generator output connections to a breaker panel. The breaker panel shall be equipped with a properly sized main breaker.

The generator output conductors shall be sized to 115% of the main breaker rating and shall be installed as indicated in the wiring section.

Manual reset 120/240-volt AC circuit breakers shall be provided in the load center as required by the circuits installed by the apparatus manufacturer

The breaker panel shall be located on the wall of the driver side front compartment.

3.3.290. 120 VOLT TRANSFER SWITCH

An automatic power relay shall be installed to allow all 120 volt accessories to be powered by the 120 volt shoreline or the generator. The transfer switch will be located in a separate box located next to the main power distribution panel. The maximum load for the transfer / relay shall be 20 amps at 120 volts.

3.3.291. 120/240 VOLT WIRING METHODS

Wiring/conduit shall not be attached to any chassis suspension components, water or fuel lines, air or air brake lines, fire pump piping, hydraulic lines, exhaust system components or low voltage wiring.

All wiring shall be installed at a minimum of 12 inches away from any exhaust piping and a minimum of 6 inches from any fuel lines.

All wiring shall be securely clamped within 6 inches of any junction box and at a minimum of every 24 inches of run. All supports shall be of nonmetallic material or corrosion protected metal. All supports shall not cut or abrade conduit or cable and shall be mechanically fastened to the vehicle.

All power supply assembly conductors, including neutral and grounding conductors, shall have an equivalent amperage rating and shall be sized to carry not less than 115% of the main breaker rating.

All Type SO or Type SEO cable not installed in a compartment shall be installed in wire loom. Where Type SO or Type SEO cable penetrates a metal surface, a rubber or plastic grommet or bushing shall be provided.

The installation of all 120/240 wiring shall meet the current NFPA-1901 Standards.

3.3.292. 120/240 VOLT WIRING IDENTIFICATION

All line voltage conductors located inside the main breaker panel box shall be individually and permanently identified. When pre-wiring for future power wiring installations, the non-terminated ends shall be labeled showing function and wire size.

3.3.293. 120/240 VOLT GROUNDING

The neutral conductor of the power source shall be bonded to the vehicle fame as required.

3.3.294. 120/240 VOLT CIRCUIT BREAKER / RECEPTACLE INSTALLATION

The system shall be installed by highly qualified electrical technicians to assure the required level of safety and protection to the fire apparatus operators. When multiple circuit are required, the circuits shall be wired to the breaker panel in a staggered configuration to minimize electrical loads on each breaker or generator (leg) circuit. The wiring, electrical fixtures and components shall be to the highest industry quality standards available on the domestic market. The equipment shall be the type as designed for mobile type installations subject to vibration, moisture and severe continuous usage.

3.3.295. 120/240 VOLT RECEPTACLE INSTALLATIONS

All receptacles installed in compartments must be a minimum of 24 inches above the ground and provided with an approved wet location cover. Wet receptacles may not be mounted at more than 45 degrees from vertical, nor can they be mounted in a face-up position.

3.3.296. ELECTRIC CABLE REEL

One (1) 120 volt, electric rewind cord reel shall be provided and wired to the breaker panel. The reel shall be securely mounted and equipped with a rewind control adjacent to the reel. The cord reel shall be mounted above the pump enclosure on the officer side.

The circuit breaker used to protect any device attached to the cord reel shall be sized to the smallest electrical connection used.

One (1) reel rewind switch shall be provided on the compartment wall

One (1) 4-way stainless steel roller assembly shall be provided. The roller assembly opening shall be the full width of the reel drum.

One (1) cable ball stop shall be installed on the cable to keep the end from passing through the roller assembly.

3.3.297. ELECTRIC CABLE

One hundred (100) feet of Type SO black 12/3 heavy duty electric cable shall be provided on the reel.

One (1) NEMA L5-15R, 15-amp, three prong twist-lock receptacle shall be provided on the end of the cable.

3.3.298. JUNCTION BOX(ES)

One (1) AKRON Model EJB, four (4) outlet junction box with four (4) NEMA L5-15R twist-lock receptacles with a 12" pigtail with a NEMA L5-15P twist-lock plug shall be provided.

One (1) holder shall be provided for each cord reel junction box. The holder shall be shipped loose.

3.3.299. CAB ROOF MOUNTED- LIGHT TOWER

A surface mounted light tower shall be provided and mounted as specified.

The light tower shall be equipped with a minimum of 3,000 watts of lighting. A 12 volt vertical look-up light shall be provided on the light tower base to automatically illuminate the operational envelope of the mast.

The light towers functions including "auto stow," are operated by a remote control. The remote control shall be mounted in a body compartment as specified.

The light tower shall be mounted on the upper custom cab roof, behind the front facing light bar.

The light tower shall have an interior light that will activate when the light tower is raised and the parking brakes are released.

3.3.300. LADDER STORAGE

The ground ladders shall be stored within a sleeve in the water tank.

To secure the ground ladders, a hinged rear access door shall be provided and tied into the "Do Not Move Apparatus" warning system.

3.3.301. LADDERS

The following Duo-Safety ground ladder compliment shall be provided:

- One (1) Duo-Safety series 900-A, 24', aluminum, two (2) section extension ladder shall be provided.
- One (1) Duo-Safety series 775-A, 14', aluminum, straight roof ladder with folding hooks shall be provided.
- One (1) Duo-Safety series 585-A, 10', folding, aluminum, attic ladder shall be provided.

3.3.302. PIKE POLE STORAGE

Three (3) pike pole mounts shall be provided. Each holder shall be accessible from the rear of the apparatus. Each pike pole holder shall be labeled to indicate the pike pole length.

The pike pole mounts shall be mounted in the through tank ladder storage compartment.

- One (1) 8' fiberglass handled pike pole shall be provided.
- One (1) 10' fiberglass handled pike pole shall be provided.

3.3.303. SUCTION HOSE STORAGE

The suction hoses shall be located on the body side panels, one (1) on the officer side and one (1) on the driver side of the apparatus.

Two (2) hose troughs shall be provided to accommodate the suction hoses. Each trough shall have drain holes.

3.3.304. SUCTION HOSE

Two (2) 10 foot sections of six (6) inch PVC lightweight suction hose shall be furnished. Couplings shall include a long handle, female swivel on one end and a rocker lug male on the other end. All threads shall be six (6) inch N.S.T.

3.3.305. STRAINER

One (1) 6" NST barrel type strainer shall be provided to attach to the suction hose. A compartment mounting bracket shall also be provided to store the strainer when not in use.

3.3.306. ADDITIONAL ITEMS SUPPLIED WITH THE VEHICLE

- 1 - Pint of touch up paint for each color
- 1 -Bag of assorted stainless steel nuts and bolts

3.3.307. LOOSE EQUIPMENT

The following items shall be provided and shipped loose with the completed apparatus at the time of delivery:

3.3.308. WHEEL CHOCKS

Two (2) ZICO #SAC-44 folding wheel chocks shall be mounted forward of the rear wheels on the driver side below the side running board compartments.

3.3.309. PAINT, PREPARATION AND FINISH

A Low VOC polyurethane finishing system, or equal, shall be utilized. A "Clear Coat" paint finish shall be supplied to provide greater protection to the quality of the exterior paint finish.

All removable items, such as brackets, compartment doors, etc. shall be painted separately to insure finish paint behind mounted items.

The cab and body shall be painted in compliance with the best modern paint practices. Bidders shall describe their paint process in detail.

The cab shall be two tone, red lower, and white upper to match other Newport trucks.

The painted body components shall be finish sanded and prepared for final paint. Upon completion of final preparation, the body shall be painted utilizing the highest quality, state of the art, low VOC, polyurethane base paint. Finish paint shall be applied in multiple coats to ensure proper paint coverage with a high gloss finish.

The cab and body shall be buffed and detailed.

3.3.310. COMPARTMENT PAINT

The interior of the aluminum compartments shall be finish painted job color with a scuff resistant webbing type paint of a contrasting color applied over the painted surfaces. Stainless bodies shall be brush finished.

3.3.311. TOUCH-UP PAINT

One (1) pint of each exterior color paint for touch-up purposes shall be supplied when the apparatus is delivered to the end user.

3.3.312. FINALIZATION & DETAILING

Prior to delivery of the vehicle, the interior and exterior be cleaned and detailed. The finalization process detailing shall include installation of NFPA required labels, checking fluid levels, sealing and caulking required areas of the cab and body, rust proofing, paint touch-up, etc.

3.3.313. FRONT CAB DOOR LETTERING

Up to 50 encapsulated gold letters with drop shadow and small engine turn shall be provided on the cab doors per the Fire Department requirements.

Lettering provided on the driver's and officer's cab doors shall be 3" high.

The lettering shall be designed and cut to match existing NFD apparatus.

3.3.314. SCOTCH-LITE STRIPE

A six (6) inch high "Scotch-Lite" stripe shall be provided. The stripe shall be applied on a minimum of 60 percent of each side of the unit, 60 percent on the rear of the unit and 40 percent on the front of the unit. The Scotch-Lite stripe layout shall be determined by the Fire Department.

The Scotch-Lite shall be white in color.

3.3.315. REAR CHEVRON STRIPING

At least 50% of the rear facing vertical surface shall be covered with alternating strips of reflective striping.

The striping shall be 6" Scotch-Lite.

The Scotch-Lite shall be Ruby Red and White in color.

3.3.316 WARRANTY, STARTING ON DELIVERY DATE

Warranty coverage by the manufacturer will begin on the date of delivery to the customer.

3.3.317. WARRANTIES

Bidders shall state their proposed warranties. The minimum warranty shall be one year, with the following extended warranties provided:

- Frame – lifetime
- Axles – 3 years
- Engine – 5 years
- Transmission – 5 years
- Pump – 5 years
- Water Tank - lifetime
- Cab structure – 10 years
- Body – 10 years
- Paint - 5 years

3.3.318. REQUIRED PROPOSAL BLUEPRINT

A scale drawing of the specific apparatus being proposed shall be submitted WITH THE PROPOSAL. Proposers should be clear that this provision is requiring a SCALE drawing of the truck which is actually being proposed. The drawing shall be done at the manufacturer's facility by the manufacturer's engineering department in order to guarantee the accuracy of the drawing. *Failure to comply with this requirement shall be grounds for rejection of the proposal!*

3.3.319. FAMA COMPLIANCE

The apparatus manufacturer must be a current member of the Fire Apparatus Manufacturer's Association (FAMA).

3.3.320. U.S.A. MANUFACTURER

The entire apparatus shall be assembled within the borders of the Continental United States to ensure more readily available parts (without added costs and delays caused by tariffs and customs) and service.

3.3.321. STEPPING, STANDING, & WALKING SURFACES

All stepping, standing, and walking surfaces on the body shall meet NFPA #1901 anti-slip standards. Aluminum tread plate utilized for stepping, standing, and walking surfaces shall be No-Slip type. This material shall be a minimum 3/16 (0.1875") in thickness. Upon request by the purchaser, the manufacturer shall supply proof of compliance with this requirement. All vertical surfaces on the body, which incorporate aluminum tread plate material, will utilize the same material pattern to provide a consistent overall appearance.

3.3.322. MAXIMUM OVERALL HEIGHT

Due to overall height limitations, the maximum overall height of the vehicle shall be documented as 120-inches.

3.3.323. PROPRIETARY PARTS

It is the intention of the Purchaser for all proposer's to furnish the apparatus with major parts commonly used by the heavy-duty truck manufacturers and open market vendors, whereas replacement parts are

more readily available and at reduced cost. The use of proprietary parts such as but not limited to axles, suspensions, engines, transmissions, frontal air bags, electronic controls, multiplexing systems, seats, pumps, gauges, foam systems, etc., may not be acceptable by the Purchaser.

3.3.324. UNDERWRITERS LABORATORIES INC. (UL) EXAMINATION AND TEST PROPOSAL

If required by the specific chapters of NFPA-1901, the proposed unit shall be tested and certified by Underwriter's Laboratories Inc. or a comparable third party testing agency.

3.3.325. SERVICE CENTER AND PARTS DEPOT

The successful proposer shall have an authorized service center, with a staff of factory-trained mechanics, well versed in all aspects of service for all major components, of the apparatus within a 150-mile radius of Newport Fire Department.

3.3.326. SERVICE CENTER INFORMATION

The center must provide a full time staff of experienced technicians with all of the required equipment to provide modern, accurate and efficient service. Proposers shall state the size of their shop and officer area in square feet. They shall state the location of the facility and provide photos of both the exterior and interior of the center. Accuracy of the description of the service center is of great importance.

3.4. SPECIAL CONDITIONS

The complete apparatus must be manufactured in the United States of America.

3.4.1. SALES ENGINEER

The successful Proposer shall designate an individual to perform the contractor's sales engineer functions. The sales engineer shall provide a single point interface between the purchaser and the contractor on all matters concerning the contract.

3.4.2. APPROVAL DRAWING

A detailed drawing of the apparatus shall be provided to the Purchaser for approval before construction begins. A copy of this drawing shall also be provided to the manufacturer's representative. Upon Purchaser's approval, the finalized drawing shall become a part of the total contract.
The drawing shall show, but is not limited to, such items as the chassis make and model, major components, location of lights, sirens, all compartment locations and dimensions, special suctions, discharges, etc. The drawing shall be a visual interpretation of the apparatus as it is to be supplied.

3.5. INSPECTIONS

The successful proposer shall provide two (2) factory inspection trips to the apparatus manufacturer's facility. Transportation, meals, lodging, and other requisite expenses shall be the proposer's responsibility.

Accommodations shall be for two (2) Fire Department representatives per trip.

The factory visits shall occur at the following stages of production of the apparatus:

- Mid construction
- Final inspection upon completion.

Travel arrangements greater than 500 miles from the manufacturing facility shall be via commercial airline transportation.

Purchaser maintains the right to inspect the apparatus, within normal business hours, at any other point during construction. Expenses incurred during non-specified inspection visits shall be the responsibility of Purchaser.

During inspection visits, Purchaser reserves the right to conduct actual performance tests to evaluate completed portions of the unit. Testing shall be accomplished with the assistance and resources of the proposer.

3.6. MATERIAL AND WORKMANSHIP

All equipment furnished shall be guaranteed to be new and of current manufacture, to meet all requirements of these specifications.

All workmanship shall be of high quality and accomplished in a professional manner, so as to ensure a functional apparatus with a pleasing, aesthetic appearance.

3.7. DELIVERY

Delivery of the apparatus to Purchaser shall remain the proposer's responsibility.

On initial delivery of the fire apparatus, a qualified and responsible representative of the contractor shall demonstrate the apparatus and provide initial instruction to representatives of the customer regarding the operation, care, and maintenance of the apparatus and equipment supplied.

The contractor shall supply, at the time of delivery, at least one (1) copy of the following documents:

The manufacturer's record of apparatus construction details, including the following information:

- Owner's name and address
- Apparatus manufacturer, model and serial number
- Chassis make, model and serial number
- Front tire size and total rated capacity in pounds
- Rear tire size and total rated capacity in pounds
- Chassis weight distribution in pounds with water and manufacturer mounted equipment, front and rear
- Engine make, model, serial number, rated horsepower, rated speed and governed speed
- Type of fuels and fuel tank capacity
- Electrical system voltage and alternator output in amps.
- Battery make, model and total capacity in cold crank amps (CCA)
- Transmission make, model and serial number. (If so equipped chassis transmission) PTO(s) make, model and gear ratio
- Pump make, model, rated capacity in gallons per minute (liters per minute where applicable) and serial number
- Pump transmission make, model, serial number and gear ratio
- Auxiliary pump make, model, rated capacity in gallons per minute (liters per minute where applicable) and serial number
- Water tank certified capacity in gallons or liters
- Paint manufacturer and paint number(s)
- Company name and signature of responsible company representative
- Certification of slip resistance of all stepping, standing and walking surfaces.

If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of suction capability.

If the apparatus has a fire pump or an industrial supply pump, a copy of the apparatus manufacturer's approval for stationary pumping applications.

If the apparatus has a fire pump or an industrial supply pump, the engine manufacturer's certified brake horsepower curve for the engine furnished, showing the maximum governed speed.

If the apparatus has a fire pump or an industrial supply pump, the pump manufacturer's certification of hydrostatic test.

If the apparatus has a fire pump or an industrial supply pump, the Underwriter's Laboratory certification of inspection and test for the fire pump.

If the apparatus has a fixed line voltage power source, the certification of the test for the fixed power source.

Weight documents from certified scale - showing actual loading on the front axle, rear axle(s) and overall vehicle (with the water tank full but without personnel, equipment and hose) shall be supplied with the complete vehicle to determine compliance with NFPA-1901.

Written load analysis and results of electrical performance tests.

If the apparatus is equipped with a water tank, the certification of water tank capacity by the tank manufacturer.

The chassis shall be certified by the apparatus manufacturer as conforming to all applicable Federal Motor Vehicle Safety Standards in effect at the date of contract. This shall be attested to by the attachment of a FMVSS certification label on the vehicle by the contractor who shall be recognized as the responsible final manufacturer.

3.8. INSTRUCTION MANUALS/DRAWINGS, SCHEMATIC

In accordance with standard commercial practices, applicable to each vehicle (including body and special equipment) furnished under the contract, the following listed manuals and schematics, in the quantity specified, shall be provided at time of delivery of each vehicle.

The contractor shall supply at time of delivery, two (2) CD copies of a complete operation and service manual covering the complete apparatus as delivered and accepted.

The manual shall contain the following:

- Descriptions, specifications, and ratings of chassis, pump (if applicable), and aerial device.
- Wiring diagrams.
- Lubrication charts.
- Operating instructions for the chassis, any major components such as a pump and any auxiliary systems.
- Instructions regarding the frequency and procedures recommended for maintenance.
- Parts replacement information.

3.9. "AS BUILT" WIRING SCHEMATICS

In accordance with standard commercial practices, the manufacturer shall supply two (2) copies of "AS BUILT" wiring schematics/diagrams for the entire vehicle at the time of delivery.

3.10. AMP DRAW REPORT

The proposer shall provide with their proposal and at the time of delivery, an itemized print out of the expected amp draw of the entire vehicle's electrical system.

A written load analysis, which shall include the following:

- The rating of the alternator.

- The minimum continuous load of each component that is specified per: Applicable NFPA-1901.
- Additional loads that, when added to the minimum continuous load, determine the total connected load.
- Each individual intermittent load.

All of the above listed items shall be provided by the proposer per the applicable NFPA-1901.

3.11. VEHICLE RECORDS

The successful proposer shall be responsible for preparing and maintaining a record file of parts and assemblies used to manufacture the apparatus. These records shall be maintained in the factory of the proposer for a minimum of twenty (20) years. File shall contain copies of any and all reported deficiencies, all replacement parts required to maintain the apparatus, and original purchase documents including specifications, contract, invoices, incomplete chassis certificates, quality control reports and final delivery acceptance documents. The Purchaser shall have access to any and all documents contained in this file upon official written request.

3.12. ACCEPTANCE

Acceptance Requirements: Once the apparatus is delivered to the Purchaser, the Purchaser shall have 72 clock hours to drive, operate and inspect the apparatus. If there are problems and/or discrepancies, the Purchaser shall notify the vendor, in writing, of the problems and/or discrepancies, and the vendor shall address the issues. Once the vendor has corrected the problems/discrepancies noted in writing, the Purchaser shall have 24 hours to drive, operate and inspect the apparatus to ensure there are no further problems and/or discrepancies.

3.13. TRAINING

A qualified delivery engineer, in the full employ of the manufacturer, or a factory-trained employee of the dealer, shall deliver the apparatus. This individual will remain in the area for sufficient time as determined by the Fire Chief or his designee to instruct the Fire Department and maintenance personnel in the operation, care, and maintenance of the apparatus delivered. All expense for such service shall be borne by the Contractor.

3.14. TERMS OF PAYMENT

The apparatus shall be paid for upon completion, delivery and acceptance by the Purchaser. The apparatus shall be quoted F.O.B. Newport, Oregon.

The proposal shall specify the maximum number of calendar days to deliver the completed and accepted apparatus to the Purchaser. **A liquidated damage fee of $150 per day** will be deducted from the final payment for late delivery and acceptance. This fee is necessary, as it would be difficult to predict and determine the Purchaser's exact damages in the event of late delivery. The parties agree this is a reasonable amount. The completion date shall be calculated from the date of contract signing by the Purchaser. The Purchaser shall complete initial acceptance tests/inspections within three days of delivery.

The liquidated damages provision may be partially or completely waived in circumstances beyond the control of the proposer, as determined in the Purchaser's sole discretion.

Any changes to the specifications made at the Purchaser's request shall be negotiated between the Purchaser and the proposer as to the cost and delivery date of the apparatus. Said changes and negotiation shall be recorded on a "change order" and signed by both parties.

3.15 **Deductive Alternatives** The following is a list of items we would consider removing in order to bring the apparatus bid within our budget. Each vendor should indicate if the list item is removable, and if so what cost savings could be realized.	Bidder Complies	
	Y / N	$
1. MULTIPLEX DISPLAY		
12. BUMPER EXTENSION		
3. STORAGE WELL – CENTER		
4. DATA DOWNLOADER KIT		
5. SHORELINE RECEPTACLE - this would be cutting the 7 (one in each compartment) down to one in the right front (medical –with heater) compartment.		
6. REMOTE CONTROLLED CAB SPOTLIGHT		
7. TRAFFIC ADVISER WARNING LIGHT		
8. FEDERAL Q2B MECHANICAL SIREN		
9. INTAKE BUTTERFLY VALVE-ELECTRIC OPERATED-DRIVER SIDE		
10. INTAKE BUTTERFLY VALVE-ELECTRIC OPERATED-OFFICER SIDE		
11. REAR SUCTION		
12. MANUAL DECK GUN		
13. FRONT DISCHARGE		
14. HOSE BED COVER, ALUMINUM TREAD PLATE		
15. SLIDE OUT FLOOR MOUNT SHELVING		
16. 120 VOLT TRANSFER SWITCH- option 1- changing this to a manual transfer switch. Option 2- taking out transfer switch and wiring all outlets to shore power, and generator would power the cord wheel.		
17. CAB ROOF MOUNTED-LIGHT TOWER		
18. LADDERS - ONE-24, ONE-14, ONE-10.		
19. PIKE POLES - ONE – 8’, ONE – 10’		
20. SUCTION HOSE		
21. STRAINER		
22. SECTION 3.4 INSPECTIONS		
23. Trade in on a “1993 KME (on International 4900 cab) with 41,058 miles. 1250 GPM (last pump test passed in 2013), auto trans, 750 gal tank two 20 gal foam tanks, Five man cab, lights and more. NO hose or equipment.		

SECTION 4
PROPOSER'S RESPONSE FORM

Submitted by:

Address:

Date:

Phone number:

Fax:

E-Mail:

The undersigned, through the formal submittal of this proposal response, declares that he/she has examined all related proposal documents and read the instruction and conditions, and hereby proposes to furnish one (1) **1500 GPM/750 Gallon Custom Pumper FOR NEWPORT FIRE DEPARTMENT** specified, in accordance with the proposal documents herein, for the price set forth in the proposal submittal attached hereto, and forming a part of this proposal, to be delivered _____ Calendar days from date contract executed.
.

All proposals are F.O.B., Newport Fire Department, Oregon.

The Proposer, by his signature below, hereby represents as follows:

(a) That no Director, officer, agent or employee of Newport Fire Department is personally interested directly or indirectly in this contract or the compensation to be paid hereunder, and that no representation, statement or statements, oral or in writing, of Newport Fire Department, its Directors, officers, agents, or employees had induced him to enter into this contract and the papers made a part hereof by its terms;

(b) The Proposer and each person signing on behalf of any proposer certifies, in the case of a joint proposal, each party thereto, certifies as to its own organization, under penalty of perjury, that to the best of their knowledge and belief:

1. The prices in the proposal have been arrived at independently, without collusion, consultation, communication, or agreement for the purpose of restraining competition as to any matter relating to such prices with any other proposer or with any competitor;

2. Unless otherwise required by law, the prices which have been quoted in the proposal have not been knowingly disclosed by the proposer prior to the proposal deadline, either directly or indirectly, to any other proposer or competitor;

3. No attempt has been made nor will be made by the proposer to induce any other person, partnership or corporation to submit or not to submit a proposal for the purpose of restraining trade;

(c) The proposer agrees to accept as full payment for the services specified herein, the amount as shown in its proposal.

The names of the principal officers of the corporation submitting this proposal, or of the partnership, or of all persons interested in this proposal as principals are as follows:

Name Title
Name Title
Name Title

Proposer is a resident proposer, as defined in ORS 279A.120. If not a resident, proposer, proposer's resident state is _____.

Proposer hereby agrees to comply with all applicable Oregon public contracting code provisions, as more specifically described in the attached contract and associated Exhibit A.

(If Sole Proprietor or Partnership)
In witness hereto, the undersigned has set his (its) hand this day of _____, 201___

Name of Firm

Signature of Proposer

(If Corporation)
In witness whereof the undersigned corporation has caused this instrument to be executed by its duly authorized officers this day of _____, 201__

Name of Corporation

By
Title
CONTRACT MANAGER:
Name Title:
Telephone number:

SECTION 5
PROPOSAL CONTENTS AND FORMAT

5.1. INSTRUCTIONS

Proposers must observe submission instructions and be advised as follows:

5.1.1. Proposals must be submitted as required by Section 2.5 of this Request for Proposal.

5.1.2. FIVE (5) copies plus a digital copy on a CD of the proposal, are to be supplied. One set of Signed Originals shall be included and clearly identified as such.

5.1.3. Newport Fire Department reserves the right to solicit additional information or proposal clarification from the vendors, or any one vendor, should the Fire Department deem such information necessary.

5.1.4. All questions regarding the request for proposal process shall be directed, during regular business hours, to:

Rob Murphy, Fire Chief
Ph. #541-265-9461

5.1.5. If a vendor is unable or unwilling to meet any Newport Fire Department RFP requirement, an explicit statement to that effect must be made in the proposal as an exception. An alternative must be submitted.

5.1.6. This Request for Proposals and all supplemental information in response to this RFP will be a binding part of the final contract entered into by the selected vendor and Newport Fire Department.

5.1.7. If a proposal is accepted and the contract awarded, but the proposer fails or neglects to execute the contract or give the required bond within 10 days after award, the proceeds of the proposal bond may be retained by the City as liquidated damages for such failure or neglect. As the damages involved herein would be difficult to ascertain, the parties are setting the damages in this manner, both agreeing that the bond proceeds would represent the City's actual damages and would not be assessed as a form of penalty.

SECTION 6
EVALUATION PROCEDURES

6.1. PROPOSAL EVALUATION PROCESS

Only those proposals providing sufficient information for the Purchaser to evaluate the criteria set forth in Section 6.2 will be deemed responsive. Award will be made to the proposer whose proposal will serve the interest of the Purchaser, as determined by the highest scoring proposal.

6.2. CRITERIA FOR EVALUATION

The Fire Chief shall apply the following criteria in making a recommendation to the City Council for the award of the contract. The criteria are listed from the most to least desirable, and the proposal will be evaluated accordingly.

Proposals that meet this criteria will then be graded on the points system listed below. If no proposal meets the delivery date, the City of Newport Fire Department may, in its sole discretion, eliminate delivery date as a criteria and rank proposals on the remaining weighted criteria.

A. Delivery date after build date (0-50 pts) **Yes No**

B. Responsiveness to specifications (0-200 pts) _____

C. Apparatus Quality (0-45 pts) _____

D. Service Capabilities (0-45 pts) _____

E. Cost (0-200 pts) _____

F. Warranty Provisions (0-50 pts) _____

G. References (0-10 pts) _____

6.3. CONTRACT AWARD

Submittal of a proposal evidences Proposer's intent to execute and be bound by the terms of the attached contract. The Purchaser will enter into contract negotiations regarding any open terms with the highest ranked proposer. During negotiations the Purchaser may require any additional information it deems necessary to clarify the approach and understanding of the requested services. Any changes agreed upon during contract negotiations will become part of the final contract. The negotiations will identify a level of work and associated fee that best represents the efforts required. If the Purchaser is unable to come to terms with the highest rated proposer, discussions shall be terminated and negotiations will begin with the next highest rated proposer. The Purchaser may reject any and all proposals.

6.4. ANNOUNCED AWARDEE

It is anticipated that a tentative contract awardee will be announced in writing to each proposer within 30 days from the date of opening. The announcement is for procedural purposes only and does not create any contractual rights in the tentative contract award. The Purchaser will not be bound to the tentative contract awardee until a contract has been executed by the Purchaser, following the close of the period for submitting protests of this selection.

CITY OF NEWPORT

1500 GPM/750 GALLON CUSTOM PUMPER CONTRACT

Based upon the proposal submitted, City of Newport (City) and _____ (Vendor) hereby enter into a contract for the purchase of a 1500 GPM/750 Gallon Custom Pumper in accordance with the specifications and proposals provided. The date of proposed delivery is the ____ day of _____, 20__. All terms of the following documents are hereby incorporated into this Contract, by reference, and Vendor agrees to comply with each:

(1) Advertisement of Request for Proposals
(2) Request for Proposals
(3) Proposal Bond
(4) Proposal Form
(5) Performance Bond
(6) Vendor's Proposal
(7) Information Supplied by Manufacturer

Payments. Vendor shall be paid by City, upon the submission and acceptance of the custom water pumper, the prices and in the manner stipulated in the Contract Documents.

Public Contracting Requirements. Vendor shall comply with all federal, state and local laws and ordinances applicable to the work under this agreement, including, without limitation, applicable provisions of the Oregon Public Contracting Code including ORS 279B.020, 279B.220, 279B.230, and 279B.235, as more particularly set forth in Exhibit A, attached hereto and incorporated herein by this reference.

Indemnification. To the extent permitted by law, Vendor shall protect, defend, and indemnify and hold the City harmless from and against all claims, demands, damages, costs, actions and causes of action, liabilities, fines, penalties, judgments, expenses and attorney fees, resulting from the injury or death of any person or the damage to or destruction of property, or the infringement of any patent, copyright, trademark, or trade secret, arising out of the work performed or goods provided under this contract, or the contractors violation of any law, ordinance, or regulation, contract provision or term, or condition of regulatory authorization or permit, except for damages resulting from the sole negligence of the City. As to the City of Newport, the contractor waives any immunity it may have under the Oregon Tort Claims Act or any Workers' Compensation statute. The parties acknowledge that this waiver has been negotiated by them, and that the contract price reflects this negotiation.

Arbitration. If any disputes, disagreements, or controversies arise between the parties pertaining to the interpretation, validity, or enforcement of this Agreement, the parties shall, upon the request of City, submit such dispute to binding arbitration. Arbitration shall be requested by delivering to the other party a written request for arbitration. Within five (5) days of receipt of such request, the parties shall select a mutually agreeable arbitrator and designate mutually agreeable rules of arbitration. If the parties cannot agree upon an arbitrator within five (5) days, an arbitrator may be appointed by the presiding judge of the Lincoln County Circuit Court, upon the request of either party submitted in accordance with ORS 36.645. If the parties have not designated mutually agreeable rules of arbitration at such time as the arbitrator is appointed, the arbitrator shall adopt rules for the arbitration. The arbitrator's decision shall be binding upon the parties.

Litigation Expenses. In any litigation or arbitration between the parties arising from or in any way pertaining to the interpretation or enforcement of this Contract, including any action for rescission of this Contract, the prevailing party shall be entitled to recover, as a part of any arbitration award or judgment, that party's costs and reasonable attorney's fees incurred in connection with such proceeding, at hearing or trial and on appeal.

Applicable Law. This Contract shall be construed in accordance with Oregon law.

Consent to Jurisdiction. The parties hereby consent to jurisdiction of the Lincoln County Circuit Court, Lincoln County, Oregon, over all legal matters pertaining to this Contract including, but not limited to, its enforcement or interpretation.

Assignment. No assignment, delegation or subcontracting of any right, obligation or duty under this contract is allowed without the prior written consent of the other party.

Entire Agreement. This Contract constitutes the entire agreement of the parties. No modification of this Contract shall be binding unless reduced to writing and signed by both parties.

Severability. If any part, term or clause of this contract is held by a court or arbitrator to be unenforceable, of no effect or in conflict with any law, the validity of the remaining provisions and clauses shall not be affected and the rights and obligations of the parties shall be construed and in force as if the contract did not contain the particular part, term or clause held to be unenforceable.

Read and Understood. Each party indicates that it has completely read all such documents and agrees that they are to be incorporated herein and to be followed by all parties. Payment is to be made upon receipt and acceptance of a fire apparatus that complies with all specifications, unless otherwise specifically detailing in contract documents.

DATED this _____ day of _____, 20___.

CITY OF NEWPORT VENDOR

By:_____ By:_____
City Vendor

EXHIBIT A

ORS CHAPTER 279B PUBLIC CONTRACTING REQUIREMENTS FOR THE PURCHASE OF GOODS AND SERVICES

(1) Contractor shall pay promptly, as due, all persons supplying labor or materials for the prosecution of the work provided for in the contract, and shall be responsible for such payment of all persons supplying such labor or material to any Subcontractor. ORS 279B.220(1).

(2) Contractor shall promptly pay all contributions or amounts due the Industrial Accident Fund from such Contractor or Subcontractor incurred in the performance of the contract. ORS 279B.220(2).

(3) Contractor shall not permit any lien or claim to be filed or prosecuted against the Contracting Agency on account of any labor or material furnished and agrees to assume responsibility for satisfaction of any such lien so filed or prosecuted. ORS 279B.220(3).

(4) Contractor and any Subcontractor shall pay to the Department of Revenue all sums withheld from employees pursuant to ORS 316.617. ORS 279B.220(4).

(5) Contractor agrees that if Contractor fails, neglects or refuses to make prompt payment of any claim for labor or materials furnished to the Contractor or a Subcontractor by any person in connection with the contract as such claim becomes due, the City may pay such claim to the persons furnishing the labor or material and charge the amount of payment against funds due or to become due Contractor by reason of the contract. The payment of a claim in the manner authorized hereby shall not relieve the Contractor or his surety from his or its obligation with respect to any unpaid claim. If the City is unable to determine the validity of any claim for labor or material furnished, the City may withhold from any current payment due Contractor an amount equal to said claim until its validity is determined and the claim, if valid, is paid.

(6) Contractor shall promptly, as due, make payment to any person, copartnership, association, or corporation, furnishing medical, surgical and hospital care or other needed care and attention, incident to sickness or injury, to employees of such Contractor, of all sums which the Contractor agrees to pay for such services and all monies and sums which the Contractor collected or deducted from the wages of employees pursuant to any law, contract or agreement for the purpose of providing or paying for such service. ORS 279B.230(1).

(7) All subject employers working under the Contractor are either employers that will comply with ORS 656.017, or employers that are exempt under ORS 656.126. ORS 279B.230(2).

(8) Contractor shall pay employees for overtime work performed under the contract in accordance with ORS 653.010 to 653.261 and the Fair Labor Standards Act of 1938 (29 USC 201, et seq). ORS 279B.235(3).

(9) The Contractor must give notice to employees who work on this contract in writing, either at the time of hire or before commencement of work on the contract, or by posting a notice in a location frequented by employees, of the number of hours per day and the days per week that the employees may be required to work. ORS 279B.235(2).

(10) All sums due the State Unemployment Compensation Fund from the Contractor or any Subcontractor in connection with the performance of the contract shall be promptly so paid. ORS 701.430.

(11) The contract may be canceled at the election of City for any willful failure on the part **of** Contractor to faithfully perform the contract according to its terms.

(12) Contractor certifies compliance with all applicable Oregon tax laws, in accordance with ORS 305.385.

(13) Contractor certifies that it has not discriminated against minorities, women or emerging small business enterprises in obtaining any required subcontractors. ORS 279A.110.

(14) As used in this section, “nonresident contractor” means a contractor that has not paid unemployment taxes or income taxes in the state of Oregon during the 12 calendar months immediately preceding submission of the proposal for the contract, does not have a business address in this state, and stated in the proposal for the contract that it was not a “resident proposer” under ORS 279A.120. When a public contract is awarded to a nonresident contractor and the contract price exceeds $10,000, the contractor shall promptly report to the Department of Revenue on forms to be provided by the department the total contract price, terms of payment, length of contract and such other information as the department may require before the proposer may receive final payment on the public contract. ORS 279A.120.